

Apple Orchard

AUGUST/SEPTEMBER 1984

CCC02438

\$3.25 U.S.

£2.80 U.K.

The Premier Magazine for Apple Computer Users

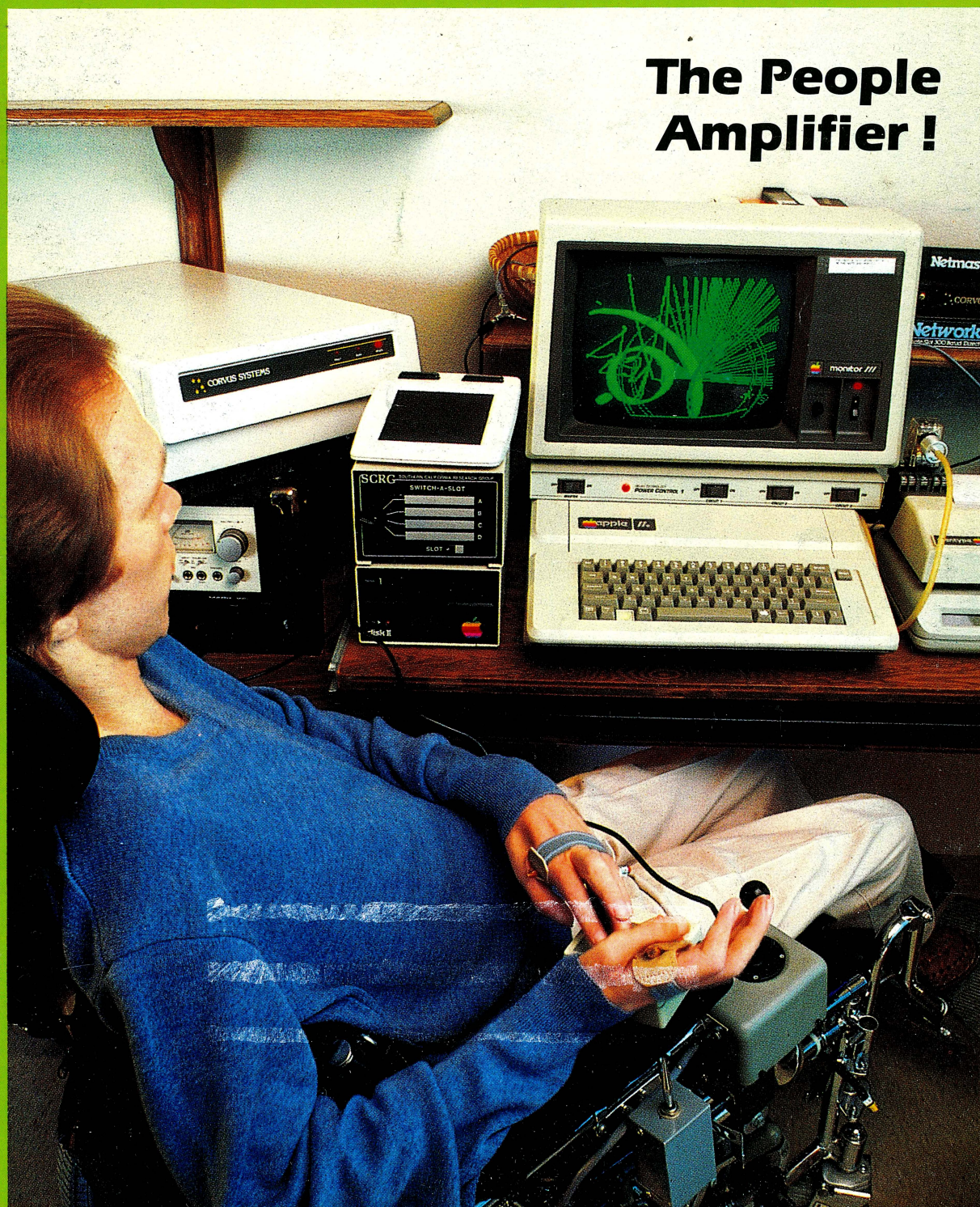
WPL
Data Base

Modula 2

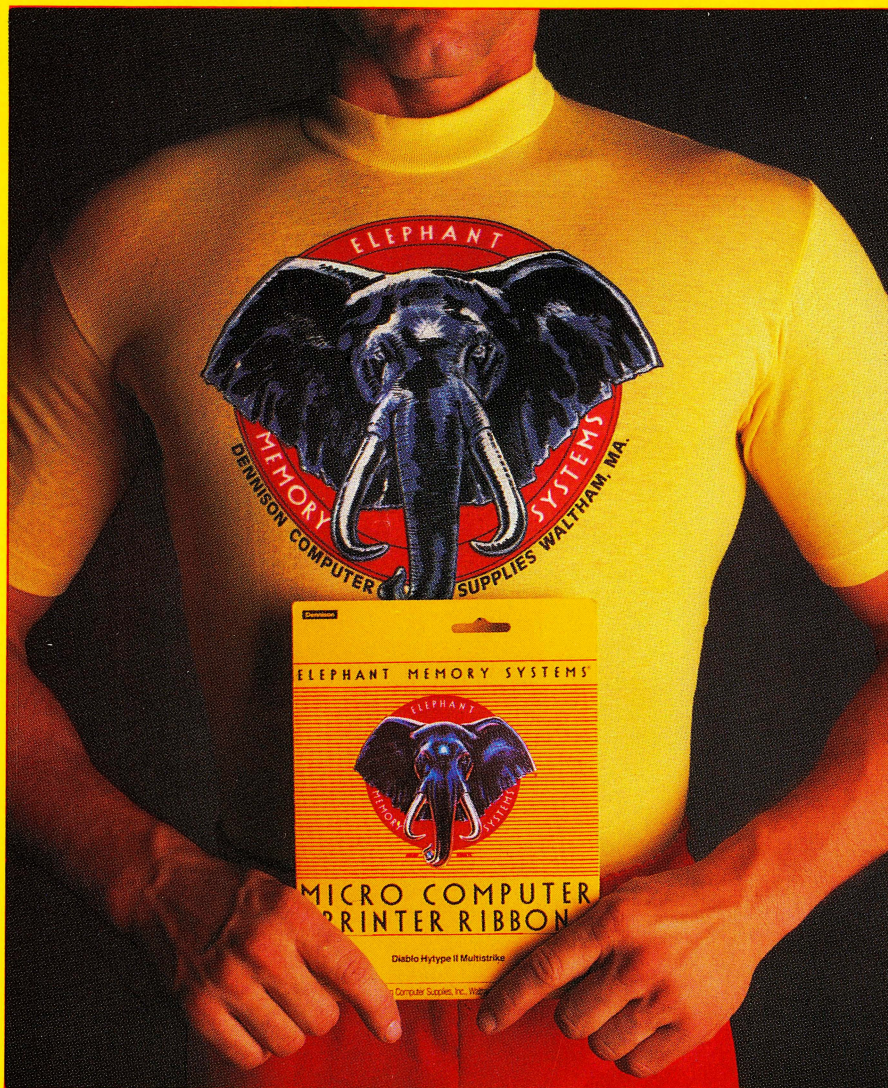
Educational
Software

Shrinking
Hi-Res

**The People
Amplifier !**



"T" FOR TWO.



BUY OUR NEW ELEPHANT™ RIBBONS AND GET AN ELEPHANT T-SHIRT FOR JUST \$2.00.

To introduce you to our new Elephant Memory Systems™ Ribbons, we're offering our unique Elephant T-shirt for just \$2. Send in your proof of purchase along with the attached coupon and \$2. We think you'll find our durable, high quality Ribbons will make your PC's printing look better than ever. And with our Elephant T-shirt, so will you. For the Elephant Ribbons dealer nearest you, call 1-800-343-8413. In Massachusetts, call collect (617) 769-8150.

Dennison

ELEPHANT™ NEVER FORGETS.

Mail this coupon and \$2.00 (check or money order, payable to Dennison Computer Supplies, Inc.) plus proof of purchase of Elephant Memory Systems™ ribbons (serial number from the package and your cash register receipt with the purchase price circled).

To: Dennison Computer Supplies, Inc./T-Shirt Offer
320 Norwood Park South
Norwood, MA 02062

Check size: ☐ small ☐ medium ☐ large ☐ x-large

Name _____ (Please print)

Address _____

City _____

State _____ Zip _____

Offer good in U.S.A. only, except where prohibited or taxed or otherwise restricted by law.
Offer expires September 30, 1984. Allow 6 to 8 weeks for delivery. One order per envelope.
Offer good while supply lasts.

AO8/84

DISK COPYING SERVICE

Fast • Reliable • Low Cost

If you produce software, ALF's disk copying service is the quick, convenient answer to your duplication needs. Fifty copies or thousands, standard or copy-protected formats, just disks or a whole package—call ALF. Consider:

- **FAST.** Most orders are shipped in a week or less. Prompt service on custom printing, too.

- **LOW COST.** Set-up charges start at \$10, copy protection set-up at \$25. Copying charges are 30¢ to 40¢ per side (see blank disk prices at right). No extra charge per copy for protected formats.

- **CONVENIENT.** We offer label application, shrink packaging, heat sealing, and other services. Need custom printed labels and sleeves? We can handle it and much more. We have vinyl folders, binders with slip cases, 3-hole vinyl disk pages, and disk mailers in stock—and can custom print them for packaging in a hurry.

- **TOP QUALITY.** We start with the finest disks available. Your choice of **3M**, **Memorex**, **Verbatim**, or other major brands—or you can supply your own blank disks. Every disk we copy is verified bit by bit and guaranteed 100% flawless.

- **RELIABLE.** ALF designs and manufactures copying equipment that other copying services and software publishers rely on every day. Our complete understanding of duplication technology assures you of the finest reproduction available—and has since 1980.

We're eager to meet your duplication and packaging needs. Give us a call today!

BLANK DISKS

ALF buys large quantities of top quality, bulk packaged disks for our disk copying service. We avoid the expense of fancy printing and labeling—and can pass these savings on to you! The disks listed below are 5¼", soft sector, double density, unlabeled, with hub reinforcement ring. Call for information on other disks, too.

3M	call for details
MEMOREX	\$146 per 100 SINGLE SIDED \$180 per 100 DOUBLE SIDED
VERBATIM	\$150 per 100 SINGLE SIDED \$192 per 100 DOUBLE SIDED

Without sleeves:

add \$2.50 shipping per 100.

With tyvek sleeves:

add \$7 plus \$2.50 shipping per 100.

Packed in boxes of 10 with tyvek sleeves:

add \$15 plus \$3.00 shipping per 100.

ALF

To order, call 1-800-321-4668. Inside Colorado & customer service: 1-303-234-0871.

ALF Products Inc. 1315F Nelson St. Denver, CO 80215

Apple III User

CP/M → SOS TEXTmover

- | | |
|-----------------------------|--|
| System Configuration | > Apple III computer
> Two Apple III disk drives
> 128K of memory |
| Features | > Does not require softcard
> Ready to run—just boot
> Source Code
> Character filters
> Reads only CP/M floppies using Apple drives |
| Cost | > \$25 ⁰⁰ (California residents add 6.5% Sales Tax) |
| To Order | > Send check or money order to:
International Apple Core, 908 George Street, Santa Clara, CA 95050.
> Make check or money order payable to International Apple Core.
Payment must accompany order and must be in U.S. funds and drawn on U.S. bank.
> Dealer inquiries invited |



Apple and Apple III are registered trademarks of Apple Computer, Inc.

EDITOR / PUBLISHER

Peter C. Weiglin

MANAGING EDITOR

Gene Wilson

SENIOR EDITOR

Morgan P. Caffrey

SENIOR EDITOR

Lenore Wolgelenter

EDUCATION EDITOR

Joyce Conklin

COPY EDITOR

Nicole Lefcourt-Bolt

ADVERTISING COORDINATOR

Cindy C. Mack

ART DIRECTOR

Mark J. Eaton

CONTRIBUTING EDITORS

Mark L. Crosby

Neil D. Lipson, P. E.

A. S. (Woody) Liswood

Barry D. Bayer

Mike Kramer

BUSINESS MANAGER

Joanne Short

CIRCULATION MANAGER

Dawn Brown

ACCOUNTING MANAGER

Ellen Roznar

CUSTOMER SERVICE

Eva Baragona

ADVERTISING DIRECTOR

Jay Eisenberg

JE Publishers' Representative Company

6855 Santa Monica Blvd.

Los Angeles, CA 90038

(213) 467-2266

Boston - (617) 437-7628

Dallas - (214) 660-2253

New York - (212) 724-7767

Chicago - (312) 445-2489

Denver - (303) 595-4331

San Francisco - (415) 864-3252

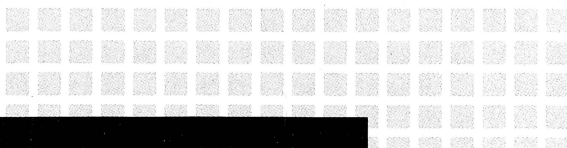
Address for all subscriptions, correspondence,
advertising material, manuscripts, etc.:

Apple Orchard
P.O. Box 6502
Cupertino, CA 95015
(408) 252 - 0902

APPLE ORCHARD (ISSN 0277 - 1950) is published monthly by Orchard Potentials, Inc., 20823 Stevens Creek Blvd., Building 3C Suite A, Cupertino, CA 95014. Second Class Postage paid at Cupertino, CA and additional entry points.

Subscription Rates (U.S. funds): \$24.00 for 1 year, \$45.00 for 2 years in the U. S., FPO & APO; \$30.00-1 yr., \$55.00-2 yr., in Canada; \$36.00 (surface), \$48.00 (airmail) in Mexico, Central America, Caribbean Islands, Philippines, Samoa; \$36.00 (surface), \$60.00 (airmail) in South America, Europe, North Africa; \$36.00 (surface), \$72.00 (airmail) in Asia, Middle East, South Africa, Australia.

"Apple" and the Apple logo are trademarks of Apple Computer, Inc. The opinions expressed herein are those of the authors, and do not necessarily represent the views of the Publisher or of the IAC. While we appreciate the co-operation of Apple Computer, Inc. and other organizations, **APPLE ORCHARD** does not necessarily represent the views of any of these companies. **Our existence derives from the thousands of Apple users; it is their interests which we serve.**



Textfile

We knew that advertising in computer magazines, particularly in brand-specific computer magazines, was down this year, and we've suffered too. Some companies are cutting back, or worse (see *Planting a Seed*). On the other side of the coin, some companies that have become very successful and very large have moved much of their advertising out of the Apple world and into more general and more prestigious publications. They have left their roots behind.

Apple Orchard's roots are very much intact, and because we elected to follow a more conservative road, we are still alive and growing. That means that our August and September issues are combined. October is not far behind. We will, of course, make sure that subscribers receive the number of issues expected; it will take a bit longer, that's all.

Despite rumors, finances have not been the major difficulty: the fact is that we outgrew our Apples, and have been transferring our subscription list to a mainframe computer. Friends, mainframes take *time*. Frankly, we're not sure all of the bugs are worked out; last week the thing tried to send 634 copies to one subscriber in central Puerto Rico. Poor fella wouldn't have known what hit him. Well, we're still working on it. Maybe it's just as well; advertising in summertime issues of any magazine is not very great.

OK, so you got this issue. In it, we present two of those stories that make you glad the Apple was invented. As a tool for handicapped persons, our favorite machines are indeed helping people to break down barriers to communication and activity.

Part two of Richard Loggins' Word Processing Data Base series begins on Page 38, and on Page 31 Rick Sutcliffe begins an analysis of Modula 2, the language that, according to its *aficionados*, leaves Pascal in the dust.

And our comprehensive product descriptions and reviews continue, as we focus on educational materials and new products for the new Apple //c.

In our October issue, we'll cover home accounting, personal management, more on our continuing series, and if we can find room, we'll begin a new series on Applesoft BASIC that does more than rewrite the tutorials. We'll also be taking a closer look at the changing microcomputer industry and how the metamorphosis affects you. Us. Them.

Now: what would *you* like to see in **Apple Orchard**? What would you like to *contribute* to **Apple Orchard**, so that those of us who think of our Apples as more than toasters can enjoy them even more??

I figure you're the best person to ask.

— PCW

Take a Bite...

Volume 5 Number 7 August/September 1984

Cover photography by Michael Jay

Articles

-
- 14** **Breaking Down the Barriers** – Lenore Wolgelenter
Apples and the Handicapped.
-
- 16** **Ricky** - Mary T. Ditson and Russell T. Osguthorpe
A Story about Computers, Music and Handicaps
-
- 18** **Shrinking the Hi-Resolution Screen** - John T. Uhley
-
- 24** **Review: Think Tank** – Dirk van Nouhuys
-
- 28** **Educational Software Sampler** – Joyce Conklin
-
- 31** **The Dialectical Apple** – Rick Sutcliffe
A new series on Modula 2
-
- 36** **Apple //c New Products** – Gene Wilson
-
- 38** **Word Processing Data Base - Part 2** – Richard Loggins
-
- 44** **Review: Dollars and \$ense** – Kenn Chapman
-
- 48** **Macintosh New Products** – Gene Wilson
-

Departments

-
- 4** **Ask Us - Tell Us**
-
- 11** **Planting a Seed** - Peter C. Weiglin
The Shakeout Cometh
-
- 46** **IAC People**
-
- 54** **The New Stuff**
Temptations, Delicacies, and Necessities
-

APPLE II USERS:

TeamMate is breaking installation and performance records.

Let the TeamMate 2000 Series of Winchester and Kodak 3.3MB floppy subsystems set productivity records for your Apple System. Taking only minutes to install, we've got all the competition beat. And TeamMate requires no special software or formatting diskettes. All you need is PRODOS!

We have a variety of configurations to fill a variety of needs. Like the TeamMate 2210 10MB Winchester. Or try the TeamMate 2203 Kodak 3.3MB floppy subsystem. Also software transparent, it gives you 2.78MB of rugged floppy storage—perfect for Winchester backup or as a low cost alternative to Winchester disks. Or get the advantages of both with our TeamMate 2213 Winchester/Kodak floppy combination. All at record prices.

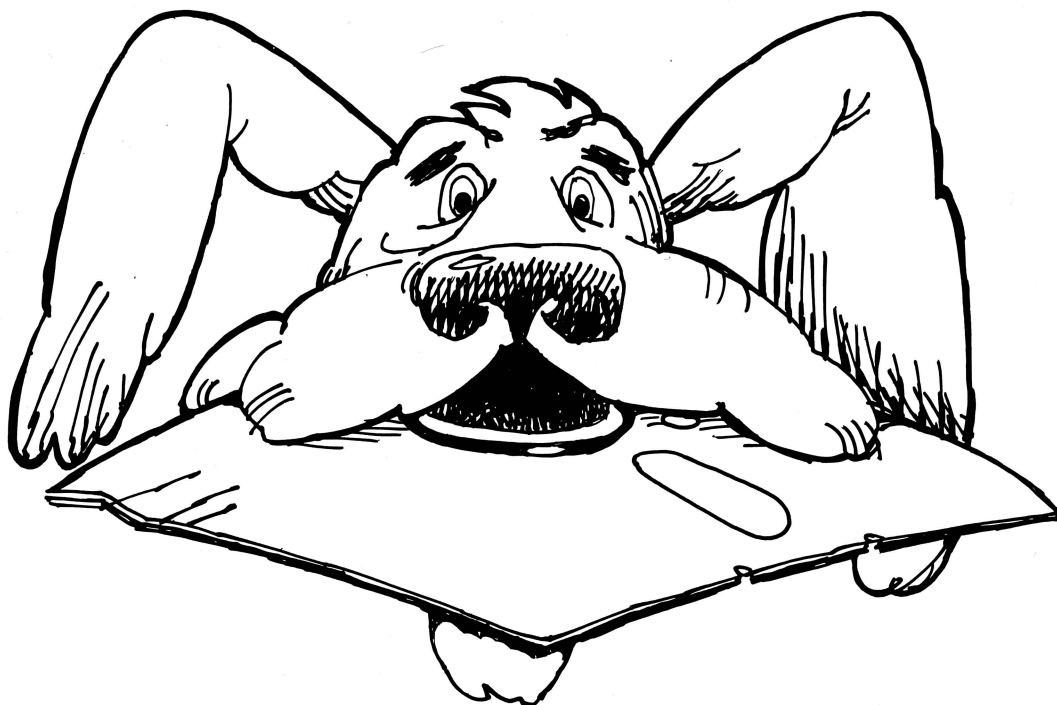
Even TeamMate's customer support is fast. Should your subsystem need any service during the first 3 months of the 6-month warranty period, your dealer will be shipped a swapout unit within **24 hours!**

So give your system a subsystem built for speed and performance. The TeamMate 2000 Series from Data Technology. Ask for TeamMate Apple & IBM subsystems at your local computer dealer. Or call us at (408) 496-0434.



TeamMate by Data Technology
2775 Northwestern Parkway, Santa Clara, CA 95051 (408) 496-0434 TWX: 910-338-2044





Having problems with retrieval?

You need software insurance.

Diskettes are fragile, and when a protected program is damaged, the results are expensive and inconvenient. If you have a backup diskette, though, you can have your Apple, IBM or compatible computer back on line within seconds...affordably. That's software insurance.

Copy II Plus (Apple][,][Plus, //e)

This is the most widely used backup program for the Apple. Rated as "one of the best software buys of the year" by *InCider* magazine, its simple menu puts nearly every disk command at your fingertips. The manual, with more than 70 pages, describes protection schemes, and our **Backup Book™** lists simple instructions for backing up over 300 popular programs. A new version is now available that is easier to use and more powerful than before. Best of all, Copy II Plus is still only \$39.95.

WildCard 2 (Apple][,][Plus, //e)

Designed by us and produced by Eastside Software, WildCard 2 is the easiest-to-use, most reliable card available. Making backups of your total load software can be as easy as pressing the button, inserting a blank disk and hitting the return key twice. WildCard 2 copies 48K, 64K and 128K software, and, unlike other cards, is always ready to go. No preloading software into the card or special, preformatted diskettes are required. Your backups can be run with or without the card in place and can be transferred to hard disks. \$139.95 complete.

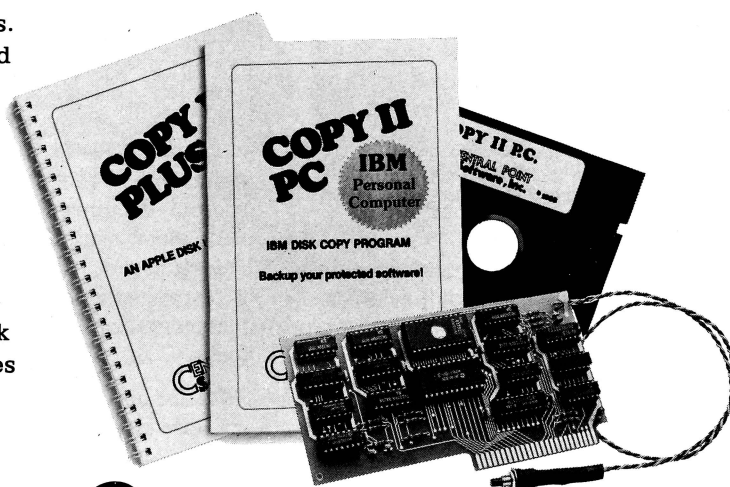
Important Notice: These products are provided for the purpose of enabling you to make archival copies only. Under the Copyright Law, you, as the owner of a computer program, are entitled to make a new copy for archival purposes only, and these products will enable you to do so.

These products are supplied for no other purpose and you are not permitted to utilize them for any use, other than that specified.

Copy II PC (IBM)

This is **THE** disk backup program for the IBM PC and PC/XT that backs up almost anything. Others may make similar claims, but in reality, nothing out performs Copy II PC...at any price. Copy II PC even includes a disk speed check and is another "best buy" at only \$39.95.

We are the backup professionals. Instead of diluting our efforts in creating a wide variety of programs, we specialize in offering the very best in backup products. So, protect your software investment, **before** your software meets its master.



CENTRAL POINT Software, Inc.

The Backup Professionals

To order, call 503/244-5782, 8:00-5:30 Mon.-Fri., or send your order to: Central Point Software, 9700 SW Capitol Hwy, Suite 100, Portland, OR 97219. **Prepayment is required.** Please include \$3 for shipping and handling (\$8 outside U.S. or Canada).



Welcome

Ask Us/Tell Us

Address your questions, answers and comments to:

Apple Orchard
P.O. Box 6502
Cupertino, CA 95015

The following "Letter to the Editor" echos sentiments that we hear all too often.

From:

Paul Farber
Photographic Magazine
8490 Sunset Blvd.
Los Angeles, CA 90069

"A PLEA FOR CLARITY"

With the much-heralded (and properly so) introduction of Apple's new, thrilling and incredible Macintosh computer, more and more people, titillated by the prospect of not having to become computer literates, but computer users by virtue of the unit's simplicity, will become computer owners, swelling the ranks of those who already know the benefits... and the pitfalls.

The pitfalls, in this case, are represented by a breed of well-meaning individuals who write software (and where would any of us be without them, eh?). Unfortunatley, in too many instances, those same well-meaning, skilled and capable people insist upon writing the documentation as well.

Too many times, too many people have purchased software packages, the contents of which were guaranteed to run their homes, run their offices and make life easier, simpler and more fun. So much for fantasy. The reality comes with the opening of the package and the confrontation with tedious, copious, incredibly badly written documentation.

Now, to be fair (and I certainly intend to be as fair as possible), for the computer user who has a certain level of expertise, most documentation -- while too often nothing more

than an ego trip designed to impress a peer group -- becomes relatively simple after several dozen readings. But, what of the uninitiated? Those poor devils are left to flounder in a sea of frustration, technical jargon, and countless pages of completely useless, poorly written "documentation."

For example, let's take a look at some software packages designed to make life simpler. AppleWriter//e is a wonderful word-processing program. But, the pages and pages and pages and pages of documentation, designed for those who are really "into it," leave the impression that a beginner can only utilize ten percent of the capability, thereby only obtaining a ten percent value for the cost of the program.

Another example is VisiCalc. Does anyone know of anybody who ever got past Chapter 3? While the program is excellent, and performs wonders beyond one's imagination and hopes, the beginner will be completely frustrated. The "promise" rarely becomes a reality. To attest to this observation, the numbers of books purporting themselves to "explaining" VisiCalc are now almost legion -- a fact which underscores the inability of the original documentation to make its point clearly, quickly and palatably. Unfortunately, the books are as incomprehensible as the original documentation, the genesis for the books.

I'll not bother to get into WordStar or dBase II. Nor will I waste any more time on such other notables as "The Home Accountant" (the distributor, Continental Software, tacitly admits to poor documentation by maintaining a "hotline" to answer questions from confused users. One would think, after receiving hundreds of phone calls about the same questions, they'd go back, rewrite the offending refer-

ences, and send out the replacement sheets to registered owners, thereby giving their tech reps a well-deserved breather.)

No. I prefer, instead, to ask for some clear thinking and understanding if the age of the Macintosh is, indeed, to be an age of clarity and ease of use. I implore software manufacturers to employ *writers*, not computerheads, to write the instructions (which is a much nicer word than documentation) for their software packages. I beg them to use people who are English literates rather than engineers who are computer literates.

If nothing else, I beg software manufacturers to also provide an index to their so-called documentation, in addition to chapter headings. I must have reams of documentation in which it is not difficult to find a needed reference --- it is virtually impossible!

Oh yes, I also beg those redoubtable writers to think in Pascal when they write documentation (a beginning, middle and end), instead of BASIC where the documentation looks like program structure replete with GOSUB's and GOTO's. Nothing wearies the reader more than a reference which is later found 173 pages into the documentation.

So there you have one man's plea for sanity, reason and clarity. The old days are behind us, and it is time for documentation writers to stop being stuck in the glue of yesterday. Computing is no longer the sole province of the hobbyist. It belongs to the entire family.

In the now-immortal words of Ger-tie, Elliott's darlin' little sister in the equally darlin' movie, "E.T.", "Gimme a break..."



We've been asked, "How do you program a joystick for the Apple //e?"

If you have the answer please write to:

Allen Hoover
42 Hollybrooke Drive
Penndel, PA 19047



REWARD!!

\$125⁰⁰*
REBATE

FACTORY DIRECT
LIMITED INTRODUCTORY OFFER

WE WANT YOUR OLD OUTDATED 80 COLUMN CARD!!

MultiView Price \$349.95

Less Reward* 125.00

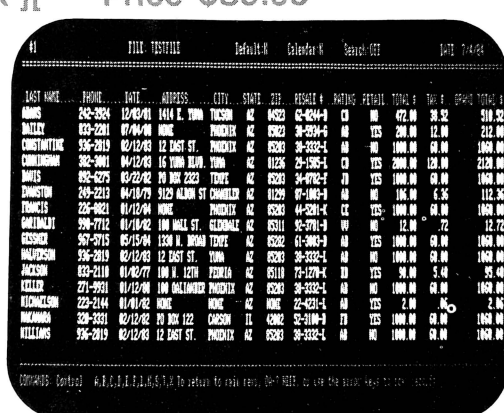
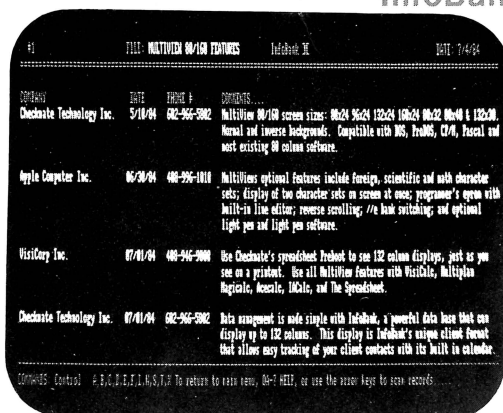
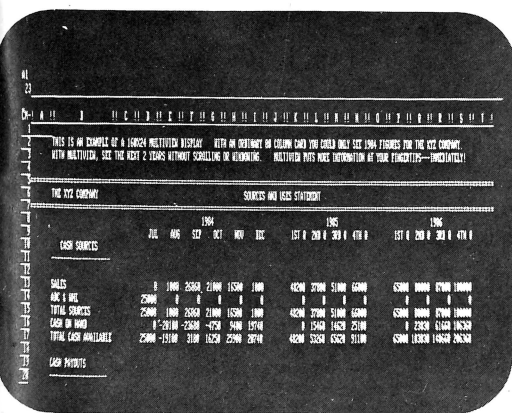
YOUR COST \$224.95

CHECKMATE RESERVES THE RIGHT TO WITHDRAW THIS OFFER AT ANY TIME

UNIVERSAL SPREADSHEET PREBOOT™

SEE 160 COLUMNS WITH YOUR FAVORITE "CALC" PROGRAM. PREBOOT WORKS WITH VisiCalc*, Multiplan (DOS)*, MagiCalc*, THE Spreadsheet*, AceCalc*, IAC Calc*, WITH PREBOOT YOU CAN HAVE UNDERLINING, BOLD PRINT AND INVERSE ON YOUR SCREEN. THE PREBOOT WORKS WITH THE MultiView Card only.

**UNIVERSAL SPREADSHEET PREBOOT
PRICE \$89.95**



VisiCalc* with Universal Spreadsheet PreBoot

InfoBank II Client Format

InfoBank II Tabular Format

//e 80RAM CARD™

128K of memory + 80 columns for your //e!! FEATURES DOUBLE HI-RESOLUTION GRAPHICS!! CAN BE USED IN TANDOM WITH MultiView 80/160 WITH NO SCREEN FLICKER ON ANY MONITOR!!*

//e 80RAM CARD — Price \$129.95

Zee 80 CARD

FOR II, II+, //e, FRANKLIN!! NEEDED FOR PROGRAMS LIKE WORKSTAR*, dBASE II*, MULTIPLAN* AND OTHER BUSINESS PROGRAMS. SOFTWARE NOT INCLUDED.

Zee 80A CARD™ — Price \$89.95

REWARD*

WHEN YOU PURCHASE A MULTIVIEW CARD DIRECT FROM THE FACTORY YOU CAN TRADE IN YOUR OLD 80 COLUMN CARD AND RECEIVE A CHECK FOR \$125.00 FROM THE FACTORY.

Limited Offer Prices Subject To Change

Dealer Inquiries Invited

*Thunderclock Plus is the trademark of Thunderware Inc.
*ProDOS is the trademark of Apple Computer Corp.
*Apple is the trademark of Apple Computer Corp.
*Franklin is the trademark of Franklin Computer Corp.
*CP/M is the trademark of Digital Research, Inc.
*Wordstar is the trademark of MicroPro, Corp.
*Multiplan is the trademark of Microsoft, Corp.
*dBase II is the trademark of Ashton-Tate
*VisiCalc is the trademark of Software Arts, Inc.
*MagiCalc and AceCalc are trademarks of Artsoft, Inc.
*AppleWorks is the trademark of Apple Computer Corp.
*The Spreadsheet is the trademark of Call A.P.P.L.E.
*IACalc is the trademark of International Apple Core



Checkmate Technology, Inc.

509 South Rockford Drive - Tempe, Arizona 85281

(602) 966-5802

(800) 325-7347

*12mHz or better

Copyright ©1984 CHECKMATE TECHNOLOGY, INC.

All rights reserved

What you should know about the International Apple Core.

If you're like most Apple users, you don't realize the many benefits of an IAC membership. Or what it can do for you and your computer.

So what's an IAC?

International Apple Core™ is a nonprofit organization of Apple users and user groups. We are dedicated to providing education, information and support to users of Apple and Apple-compatible products.

We aren't just for clubs. An individual can enjoy all the special benefits we have been providing user groups since 1979. You may share information on new applications. Or learn the latest on products. Or keep up on Apple events. Even receive specialized training.

If you'd like to join a local user group or contact other Apple enthusiasts, we can help.

A membership that pays you.

As a member of IAC you nearly get paid with what you will save. By joining you will save nearly \$20 on our electronic spreadsheet, *IACalc™*. Not to mention all the other benefits only available to you as a member.

Information, please.

IAC provides many sources of information. Your \$30 yearly membership fee brings a year of *Apple Orchard* magazine devoted to Apple systems and compatibles. Lists of IAC user groups, Apple news, and article reprints are at your finger tips.

You will be eligible to receive our *Disk of the Month*, a subscription to user contributed software. Each disk presents you themes like games, education or a potpourri.

Special-interest and local user groups are a wealth of information. And we can help you find them.

Get an education.

You'll receive many educational benefits from our software programs. Our *3Pak™* series of theme packaged programs includes: Educational, Financial, Games and the popular Logo.

We have Applesoft Tutorial and an Education disk which is great for children.

Support for your Apple and you.

For a little as \$50 annually and no deductible, IAC members can protect their hardware, software and media up to \$15,000.

Attach-Bios and *CP/M→SOS Converter* are ideal disks for Apple II Pascal and Apple III CP/M® application writers, vendors and users. All documentation is on the disks and no softcard is required to run Converter.

Invite your friends and save.

IAC offers user groups a special package. For \$90 your group receives a full year membership with subscriptions to *Apple Orchard* or other publications made available through us. Included are the Disks of the Month and a listing of other IAC affiliated user groups worldwide.

Individually or as a group you can't lose. So fill out the membership coupon below. And don't forget to ask for our product catalog.



The companies we keep.

Here is a list of the corporations that support and sponsor International Apple Core.

Apple Computer Inc., Cupertino, CA
Brock Software Products, Crystal Lake, IL
Burtronix, Orange, CA
Digital Research Inc., Pacific Grove, CA
East Side Software Co., New York, NY
Educational Software Products, Glencoe, IL
Electronic Arts, San Mateo, CA
General Microcomputer, Inc., Michigan City
IN Hayes Microcomputer, Norcross, GA
Houston Instrument Division, Austin, TX
Howard D Sams Co. Inc., Indianapolis, IN
M&R Enterprises, Santa Clara, CA
Macworld, San Francisco, CA
Multi-Tech Systems, Inc., New Brighton, MN
Nestar Systems, Inc., Palo Alto, CA
Nibble-Micro-Sparc, Inc., Lincoln, MA
Omega Microwave, Chicago, IL
Source Telecomputing, McLean, VA
Sundex Software Corporation, Boulder, CO
Turning Point Software, Watertown, MA
Vagabondo Enterprises, Aptos, CA
Verbatim Corporation, Sunnyvale, CA

Apple, Apple II, Apple III and SOS are registered trademarks of Apple Computer, Inc.
International Apple Core is Licensed by Apple Computer, Inc. to use certain of the latter's trademarks.

© 1984 International Apple Core

IACalc and 3Pak are trademarks of International Apple Core.
CP/M is a registered trademark of Digital Research.

IAC/Apple Orchard Membership Application

- ☐ \$30 US, Individual Membership
- ☐ \$40 Canada & Mexico Individual Membership
- ☐ \$90 US & Canada, User Group Package

International Memberships

- ☐ \$72 Individual Membership
- ☐ \$152 User Group Package

Name _____

Address _____

City _____

State/Zip _____

Country _____

- ☐ Payment enclosed (U.S. funds only)
- ☐ VISA ☐ MasterCard
- ☐ Please send your product catalog.

Charge Card No. _____

Interbank No. _____

Expiration Date
____ MO ____ DAY ____ YEAR

Name of User Group _____



INTERNATIONAL
APPLE CORE™
908 George Street
Santa Clara, CA 95050

Signature _____

YES, sign me up! Apple Orchard

1 YEAR SUBSCRIPTION 12 ISSUES

USA

☐ 1 yr. \$24.00 ☐ 2 yrs. \$45.00

CANADA

☐ 1 yr. \$30.00 ☐ 2 yrs. \$55.00

ELSEWHERE

☐ 1 yr. Surface - \$36.00
(Write for air mail rates.)

Name _____

Address _____

City _____ State _____ Zip _____

Interbank No. 4-digit number above your name on MasterCard

Charge Card No.

Credit Card Signature _____ Card Expires _____

☐ Check/Money Order

☐ MasterCard

☐ VISA

Payment must accompany order and must be made in U.S. funds and drawn on U.S. bank.
Make check payable to APPLE ORCHARD.

Subscription cards

Help Stamp Out Magazine Theft...

*Give one of these coupons to people who "Borrow" your copy.
Er...this is your copy, isn't it?*

YES, sign me up! Apple Orchard

1 YEAR SUBSCRIPTION 12 ISSUES

USA

☐ 1 yr. \$24.00 ☐ 2 yrs. \$45.00

CANADA

☐ 1 yr. \$30.00 ☐ 2 yrs. \$55.00

ELSEWHERE

☐ 1 yr. Surface - \$36.00
(Write for air mail rates.)

Name _____

Address _____

City _____ State _____ Zip _____

Interbank No. 4-digit number above your name on MasterCard

Charge Card No.

Credit Card Signature _____ Card Expires _____

☐ Check/Money Order

☐ MasterCard

☐ VISA

Payment must accompany order and must be made in U.S. funds and drawn on U.S. bank.
Make check payable to APPLE ORCHARD.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 626

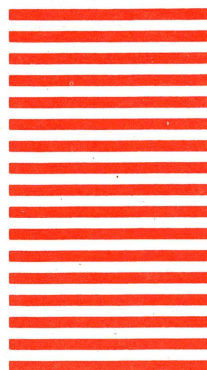
CUPERTINO, CA

POSTAGE WILL BE PAID BY ADDRESSEE



Apple Orchard

**P.O. Box 6502
Cupertino, CA 95015**



Subscription cards

*Help Stamp Out Magazine Theft...
Give one of these coupons to people who "Borrow" your copy.
Er...this is your copy, isn't it?*



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 626

CUPERTINO, CA

POSTAGE WILL BE PAID BY ADDRESSEE



Apple Orchard

**P.O. Box 6502
Cupertino, CA 95015**



Planting A Seed

The Shakeout Cometh

Frankly, for this issue of **Apple Orchard** I was tempted to run the *Planting a Seed* from our March 1984 issue unchanged. Entitled "The Vanishing Companies," that essay spoke to the current phenomenon of computer industry firms vanishing from the scene amid a swirl of legal-size papers.

Yes, there's a shakeout, all right. The personal computer business is generally "soft" these days. Of course, that softness must be measured against expectations that were often less than realistic. If you added up the total projected 1984 revenue for all of the Silicon Valley company business plans, it'd probably exceed the Gross National Product.

And if you read the business press, you may also have seen articles painting the computer magazine field as the Sargasso Sea of investments. The upheavals that have stunned the personal computer, and the personal computer publishing, industries peaked (so far) with an item in the *San Jose Mercury News* that *Softalk* was ceasing publication and closing its doors.

A number of magazines have left the field. Some were independently poor, and some were efforts of large publishing companies, killed off because they were incapable of pouring enough money into the corporate maw. Right away.

Peelings is an example of the independents. A labor of love that breathed fresh New Mexico air into the Apple atmosphere. A good but small magazine, poorly funded. But it was a heroic effort for the dedicated folks running it. It's regrettably uncommon that good small magazines fade away, unmindful of our regret.

But *Softalk*?? The monster magazine that we secretly envied for four years, because they were able to do the promotional things necessary to grow, while **Apple Orchard** wallowed in non-profit organization politics?? *Softalk* is gone?? It's a little like having a giant redwood tree come crashing down outside your office window. You don't expect it, you can't ignore it, and it leaves a big hole.

We'll let the pundits and the lawyers analyze the whys and wherefores of the situation. It may even divert some folks from the Ferraro-Zaccaro financial follies. Suffice to say here that *Peelings* and *Softalk* will be missed. They were among the early labors of love aimed at users of the Apple computer. The slick megabuck mags that came to join us later are finding that money can't quite buy the kind of loyalty we remember from the "old days", three and four years ago. The principals and other folks at both magazines put in a lot of work, and they have had their dreams shattered. That's a price beyond financial loss.

Softalk is gone. *Peelings* is gone. And, contrary to rumor, **Apple Orchard** yet lives. Some might say that there's no justice in the world. Well, we're here because of the loyalty and support of our readership, certainly not because of a bottomless bankroll. We're thankful that you exist, and that there are (barely) enough savvy advertisers who recognize you as a group of people worth talking to, over and above the mass of people who bought Apples.

Your expressions of support and encouragement (as opposed to the indignation which we might have expected for deviating from strict monthly publication) has been the best part of the past six months. We also note that the International Apple Core, for whom we are the official publication, is attracting members, and that's good too. We're going to see that they *make* money, not lose it.

As I said in March, we'll keep trying. Because you're worth trying for.



Breaking Down the Barriers

Apples and the Handicapped

Chuck Fisher



By Lenore Wolgelenter

Photography by Michael Jay ©1984

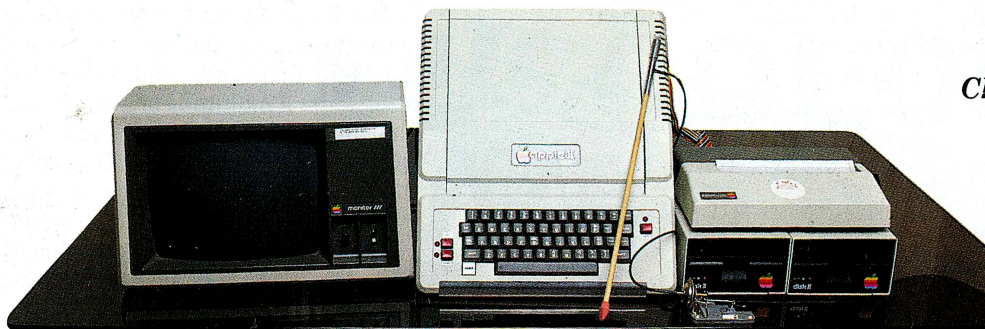
12 Apple Orchard – August/September 1984

Cliches, like bad puns, have a way of making us wince, yet we acknowledge their truth. Chuck Fisher is one person who discovered that if life gives you lemons, make lemonade. Two years

ago Chuck was an electronic synthesizer technician, played keyboards, flute and harmonica, toured as a rock musician, recorded a blue grass album, worked in a sound studio and studied martial arts.

One night, unexpected and unwelcome visitors attempted to rob Chuck of his instruments, and in the process of self protection, he was shot in the neck, altering his life forever. He went from being an able-bodied individual living and working in Santa Cruz, California, to a severely disabled quadriplegic. Following a two week coma and his

recovery period, Chuck had a lot of time to focus his attention on life in a wheel chair, requiring constant care. He decided that "pity won't work!" He had to figure out what he could do and still be useful.



Chuck's Work Station

After spending time in the hospital and an old-age home, Chuck read about a half-way house founded by John Grammer. John is also a quadriplegic with an amazing amount of determination to improve his own life and the lives of those with severe physical handicaps. Motivation and persistence gave John enough support to move out of an institution and into a home with special equipment and a support staff.

Using his motivation and knowledge of the system, John Grammer set up his first half-way house in Berkeley and then on to a second in Corralitos. The house in Corralitos had rooms for privacy, wide doors for wheel chairs and a ramp for easy access. After moving in, John needed to communicate with various government agencies, and he wanted to develop a greater level of self sufficiency; computers presented part of the solution. Working with the local Easter Seal Foundation, John set up and individual fund in his name and solicited tax deductible donations. Once there was enough in the fund, John purchased a TRS-80 and an Apple Computer.

John Grammer's next step was to learn how to use his computer; he enrolled in a Cabrillo Junior College computer course taught by David Warren. The solution for using the keyboard was through the use of a "mouth stick", an 18-inch rod with a rubber eraser at the end to hit the keys. In order to use the function keys, he works with a "sip and puff" device, a rubber tube attached to a stick, through which he inhales and exhales to press down the required function key.

It was into this environment of self-determination and support that Chuck Fisher decided to take on the bureaucracy and get himself released from the home. Having accomplished

that, he moved into the Corralitos house and got involved with computers. His shoulder mobility and hand dexterity is greater than John's. Using special bands around his hands which have a slot to hold a pencil, eraser end down, he is able to hit the keyboard of his Apple, play the alphaSyntauri and generally input his own information. He does however, need assistance to put in and remove the diskettes from the drives.

During this preliminary involvement with computers, both John Grammer and Chuck Fisher came to the attention of Professor Warren White of San Jose State University. Professor White, of the Department of Industrial and Systems Engineering, together with his students, have become involved in several design projects. One of the projects on the drawing board includes analog and electrical "sip and puff" type tools for individuals with no manual dexterity. Another is the design and development of a hydraulic device to hold equipment which can be moved from room to room. This project requires extensive research and modeling to provide the necessary design to balance the different weights of the computer equipment.

Professor White develops a sparkle in his eye when he talks about developing a tool and compatible software to improve the circulation of bedridden individuals. Constant pressure on certain body points creates extreme discomfort, and by programming an Apple to move the bed, the circulation of these individuals would be increased, thus eliminating the discomfort. His other long range plans include acquiring a Lisa for a nationally known industrial designer, who is also a quadriplegic. The Lisa software would allow this individual to use his time and ability with CAD/

CAM and develop tools for the handicapped.

Together with the Easter Seal Foundation, Professor White, Chuck, John and David are spearheading the development of an equipment lending library. Every quadriplegic has his/her own specific needs and circumstances. If enough equipment can be purchased and loaned out, the individuals could evaluate their needs and then put in requests for specific instrument modifications prior to purchasing their own computers. At the time of this writing, the final okay from the Board of Directors is just around the corner; Chuck will probably become the manager of a local area network for handicapped individuals. He took particular pleasure in showing me the final report from the Department of Rehabilitation in which they would no longer serve him as his "health would interfere with any vocational training program."

This network system would be used as a database for medical resources and information. According to Chuck, there are many complications which can occur with a quadriplegic; attendants or hospital personnel may not have adequate information and training to handle the problem. The gathering of this information into one accessible data base could save lives. In addition, there would be training for attendants and support personnel in case of emergency and networking with other organizations focusing on specific physical, emotional or legal problems of the handicapped. On a grander scale, Chuck is looking forward to developing telecommunications systems and having this information accessible across the country.

Being short on cash and big on "chutzpah", Chuck managed to acquire a rather extensive work station. He is presently working on a pro-

gram to get his Corvus hard disk drive to work with the Koala Pad to provide menu driven screens. He plans to use his Visionary Electronics modem for an extensive data base communication system and the Zoom modem for an easy to use local net-

software was evaluated for each particular subject, and when necessary, special software

Syracuse, N.Y. Carol Cohen, director of the program, and her staff have been working for the past four years providing diagnostic and evaluative services for a multitude of disabilities. The oldest client is 85 and the youngest is one year old. This child was diagnosed as having a rare cranial syndrome and will never talk. An infant training program is beginning to take shape using the Apple. According to Carol, "the beauty of the Apple is that there is so much software and peripheral equipment already available AND, the systems we design can be flexible to allow for changes in the patients skills and abilities."

At present the Schneier Communication Unit has over 300 patients. The extensive evaluation process through installation and training can take anywhere from 3 to 18 months. Carol was quick to point out that, once the initial training is complete, the client never really "goes away". Periodic checkups and equipment reviews allow people, who at one time could only gesture as a form of communication, to now participate in a full school program, community or family life. This is not too different a goal from the one set by John Grammer for his half-way house or for Chuck Fisher who decided, while in the hospital, that he was once again going to participate in the world's activities.

Since my first visit with Chuck and John at their home in Corralitos, Chuck has succeeded in getting his own apartment in Santa Cruz. He is now putting in a grant for a specially equipped van and has every intention of working again as a sound studio engineer. In the meantime, he is getting his equipment in order, developing software and working to improve the lives of other quadraplegics in the Santa Cruz area; all this is made possible through the development of the Easter Seal Foundation's equipment lending service and local area network.

The final report from the Department of Rehabilitation stating Chuck's "health at the present time interferes with carrying out a vocational program."

working tool. And whenever a letter has to go out, he has Sierra-On-Line's Homeword software to serve as a word processor.

The inexpensive versatile microcomputer has made the difference between a life of isolation and non-involvement and one of learning and contribution. At the Rehabilitation Engineering Center, of the Children's Hospital at Stanford University, the Apple computer is being used as a tool to communicate with and teach skills to severely disabled young people. After getting a Masters Degree in Bio-Engineering, Peggy Barker became one of the moving forces behind a project to teach communicative interaction skills using the Apple //e. All of the students involved are severely handicapped and have difficulty making themselves understood. Commercial

was written. In addition to software, hardware such as touch sensitive templates, speech synthesizers and joysticks are standard equipment. If necessary, special hardware is designed and developed. Should the student be so limited in dexterity or body movement, special switches are produced. Some switches are attached to the wheelchair and activated by head movement, hands or feet; any reliable and controllable movement can serve as the vehicle for a switching device.

The applications for Apple computers to assist the handicapped are easily borne out by the work being done at the Schneier Communication Unit of United Cerebral Palsy in

**DEPARTMENT OF REHABILITATION
CLOSURE REPORT
DR 2298 (4/79)**

Dear Charles

The action checked below gives the reason the Department can no longer serve you. If your situation changes and you feel you can benefit from our help, you may reapply for services at the nearest Rehabilitation office.

- ☐ You have successfully completed your Individual Written Rehabilitation Program.
- ☐ You have not contacted this office in some time nor have we been able to reach you.
- ☒ Your health at the present time interferes with carrying out a vocational program.
- ☐ You have indicated that you no longer desire vocational rehabilitation services.
- ☐ You are institutionalized and unavailable for further rehabilitation services.
- ☐ You have transferred to another agency.
- ☐ You have not made reasonable efforts in carrying out the vocational program.
- ☐ You have no disabling condition. *
- ☐ You have no vocational handicap. *
- ☐ There is no reasonable expectation that vocational rehabilitation services will help you become employed at this time. *
- ☐ Other

DISCUSSION:

* CERTIFICATE OF INELIGIBILITY

☐ IT HAS BEEN DETERMINED THIS PERSON DOES NOT MEET THE CRITERIA OF ELIGIBILITY CHECKED ABOVE.

CLIENT (VIEW) ON CLOSURE

☐ Concurs

REHABILITATION COUNSELOR'S SIGNATURE [Signature] DATE 4/19/84

PROGRAM SUPERVISOR'S SIGNATURE [Signature] DATE 4/19/84

STATUS (66 / 29, 30, 26 (Circle one))

14" COLOR MONITOR SALE!!!

(Lowest price in USA)



14" Color Computer Monitor



- Built in speaker and audio
- Front Panel Controls
- For Video Recorders
- For Small Business/Computers
- Apple-Commodore Atari-Franklin-etc.

- Beautiful Color Contrast
- High Resolution
- Sharp Clear Text
- 40 Columns x 24 lines
- List \$399
SALE \$219

15 Day Free Trial - 90 Day Immediate Replacement Warranty

12" HI—RESOLUTION AMBER TEXT DISPLAY MONITOR List \$249
SALE \$119

80 Columns x 24 lines, Hi-Resolution-crisp clear easy to read text with anti glare screen! A Must for word processing.

12" SANYO GREEN OR AMBER SCREEN MONITOR List \$199 **SALE \$99**

80 Columns x 24 lines, amber or green text display, easy to read, no eye strain, up front controls.

9" SANYO GREEN SCREEN DATA MONITOR List \$149 **SALE \$69**

80 Columns x 24 lines easy to read, up front controls metal cabinet.

• LOWEST PRICES • 15 DAY FREE TRIAL • 90 DAY FREE REPLACEMENT WARRANTY
• BEST SERVICE IN U.S.A. • ONE DAY EXPRESS MAIL • OVER 500 PROGRAMS • FREE CATALOGS

Add \$10.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$20.00 for CANADA, PUERTO RICO, HAWAII orders. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail! Canada orders must be in U.S. dollars. Visa - MasterCard - C.O.D.

**PROTECTO
ENTERPRIZES** (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

Ricky

A Story about Computers, Music and Handicaps

By Mary T. Ditson
Certified Music Therapist
Provo School District
Provo, Utah 84601

Russell T. Osguthorpe
Associate Professor of
Educational Psychology
Brigham Young University
Provo, Utah 84602

You and I know how easy it is to become fascinated with computers. But would we expect an adolescent with the diagnoses of "deaf," "blind," "autistic" and "severely retarded" to share such a fascination? In the case of Ricky Jones (name changed for confidentiality) it was a "love at first experience" relationship with some extremely positive results. Ricky's story takes place in a day school for retarded and multiply handicapped students. It is a story about how music and computers were used to help release Ricky from a self-contained world of isolation and aggression.

Computers had been used to "read" to the blind and to speak for those without speech, but could a computer be used to break down the barriers that separated Ricky from his fellow human beings? Seldom have computers been seen as an aid to socialization. More often they have been criticized as a

dehumanizing force that weakens social awareness, drawing people away from each other and into the world of the green monitor. But computerized music had never been used with handicapped students. When combined with music, perhaps computers could then be used to help create social closeness rather than separateness. In the following description the music therapist recounts her experience in using computerized music to help Ricky come out of his shell of autism and retardation.

—Russell Osguthorpe



My first exposure to Ricky was purely auditory. I was preparing materials in the school media center as I subconsciously heard on a distant piano a string of melodies played nearly perfectly one after the other. As the playing continued, curiosity led me down the hall to discover Ricky, a lanky six-foot 14

year old, hunched over the keys using his index finger of one hand to pound out the melodies and cupping his other hand behind his ear. Though diagnosed "deaf-blind," he obviously could hear and see, some. Though diagnosed retarded, I learned that Ricky absorbs and remembers **musical** information readily. The diagnosis of "autism" is a more obscure one, referring to Ricky's reluctance to communicate and relate to others except in a very sporadic, sometimes violent manner. But Ricky, like a surprising number of young people diagnosed with "autism," found in music some kind of safety and his affinity to the piano was a very positive aspect of his personality.

As a music therapist specializing in work with autistic students, I was very interested in **using** Ricky's affinity for the piano to **develop** his communication and social skills. Also, knowing that "autistic" students often have a particularly high attraction to mechanical objects, the alphaSyntauri music synthesizer seemed to be the perfect therapeutic tool. (The alphaSyntauri consists of a five octave keyboard connected through a special synthesizer board to an Apple II computer).

I saw Ricky three or four times a week for 11 weeks with each session lasting about 20 minutes. Ricky's teacher and I established several goals for him to achieve during these sessions. The first goal was to increase spontaneous speech. Ricky could answer some simple questions but, at that time, spoke of his own accord only about once every six months. The second goal was to improve Ricky's use of his residual hearing. The third goal was to increase Ricky's ability to display his feelings and emotions. Even in the midst of attacking others or throwing furniture, Ricky's face always remained expressionless.

The computer caught Ricky's interest immediately. He dropped the habit of cupping his hand to his ear, since the volume had been adjusted to a level at which he could hear. The surprise of vastly different sounds coming from a seemingly familiar keyboard caused Ricky to draw back in amazement — the first sign of his expression of feelings.

It was possible, then, to use Ricky's high motivation to play the alphaSyntauri to make certain requirements of him. (Fortunately, I did not know that requirements, as such, could lead to violence on his part.) I looked at the operation of the alphaSyntauri as a series of decisions — many creative (i.e. no wrong or right) — and I required Ricky to make those decisions and, later to express his choices verbally. Since he dearly wanted to play and hear the synthesizer, he complied, and found that his verbal expression of choices could have a very pleasant, definite impact on the "environment." By saying "loud" he could make his own playing audible; the result of not speaking was a silent keyboard. He not only discovered that saying "harmonic sweep" would yield a very different effect from saying "pin piano," but he also developed preferences among the various sound possibilities and seemed to use these expressively day to day. Ricky found out that he could be in control and that his words had power. He learned that words could cause real changes in a realm that was extremely meaningful to him — music. The absolute consistency of the computer enhanced the effect that this process had on Ricky.

For one who has not worked with severely handicapped students, the fact that a person discovered power and

pleasure in verbal expression may seem quite ordinary. Almost every two year old goes through an identical process (often with the word "no") quite naturally. But, Ricky is a 14 year old person who prior to the therapy, chose to speak spontaneously only about once every six months. Soon after the therapy began, Ricky's teacher noticed that he was speaking more often and that his violent outbursts virtually disappeared. By the end of the course of therapy, Ricky was speaking three to five times daily, thus dramatically meeting the first goal of increasing spontaneous speech.

With regard to the second goal, of improving his use of residual hearing, Ricky became accustomed to asking for "loud" and he systematically synchronized with tones further and further from his "optimal" hearing range during an exercise called "Warm Up." In this exercise, a rhythmic, basic "beat" was programmed to appear, first, in all five octaves, then four, three, two and finally in only one (lower frequency) octave. At first, Ricky only seemed to hear and synchronize with the first two sections of the exercise. Gradually, he became skilled at hearing and synchronizing with the entire exercise.

The third goal, of increasing Ricky's display of feelings, was also approached successfully. In one instance, I recorded Ricky's playing of a particular song and, during the recording, he made an error and repeated the small section around it several times in order to correct it. Listening to the playback, Ricky laughed aloud at the "mistake." He also showed a great deal of feeling upon hearing his music played back fast and learned to ask, delightedly, for "faster."

Ricky, like many retarded persons, had a tendency to "perseverate," or to repeat actions — in this case, songs — over and over. This is usually a difficult tendency for an educator or therapist to address, but the synthesizer simplified the task. If Ricky began to play a song too many times, I simply turned the volume to zero. Ricky enjoyed trying to "stump" me and play a bit before I turned it down. For a person with his limitations, this kind of human interaction — teasing and joking — is very rare and, for Ricky, it was definitely therapeutic. This "game" addressed his perseveration and provided a forum for the expression of many positive feelings.

Ricky's goals were met. As "side effects" to the therapy, he gained musical skills, social skills, and some familiarity with the computer. Due to the increase of language and more normal social behavior Ricky was transferred from his "adaptive behavior" classroom, designed for students who need an extremely structured situation, to a regular classroom for retarded students.

Ricky's story is important because it shows that computers can be used to bring people closer together. Without the music therapy it is unlikely that Ricky would have developed his new abilities with speech and emotional expression. But how many Ricky's are there in the world? His unique combination of handicaps and affinity for music are not common, even in the realm of special education. However, the need for social awareness and acceptance is universal. Ricky's story is one example of how computers might be used to enhance these universal needs. It is hoped that Ricky's success will inspire others to create even more promising techniques for using computers to improve communication and human understanding. ●

Shrinking the Hiresolution Screen Down to Size

by John Uhley

Shrinker is a machine language utility which enables an operator to reduce or "shrink" hiresolution (HiRes) screens. Shrinker can be used to display multiple HiRes pictures and graphs simultaneously. Before attempting to describe the various parameters used by shrinker, it would be wise to review some basic facts regarding HiRes graphics.

Hiresolution points displayed by the Apple II computer actually correspond to individual bits in the Apple's memory. The bits stored between memory locations \$2000 and \$3FFF determine the points displayed on the Apple's first HiRes screen. Similarly, the bits stored between memory locations \$4000 and \$5FFF determine the points displayed on the Apple's second HiRes screen. When a bit in these memory locations is set to one, a point is displayed on the HiRes screen. Conversely, when a bit is set to zero, a blank space is displayed on the screen.

The color of the points displayed is controlled by the setting of the eighth bit of each of these memory locations (this bit is not used to display a hires point). The position of a point and its proximity to other points also has an effect on the color displayed.

In order to understand how the shrinker program functions it is useful to observe the shrinking process in action. Figure A* illustrates a HiRes byte which is to be shrunk by a factor of two. As discussed in the last paragraph, only the first seven bits of this byte correspond to HiRes points.

In order to shrink this byte each bit pair in the byte must be combined to form a single new bit. Since there are only three pairs of bits in this byte (1 - 2, 3 - 4, 5 & 6), the seventh bit will

not be used in this example. The bit pairs to be shrunk are illustrated in figure B.

Is it possible to accurately combine two bits into a single new bit? The answer to this question is no. It is, however, possible to estimate the value of a new bit. Observation of all the possible values of any two bits will reveal one way of eliminating some obvious answers. If both initial bits are set to one, the new bit should also be set to one. Likewise, if both initial bits are set to zero, the new bit should also be set to zero. This is illustrated below:

INITIAL BITS:	1	1	(and)	0	0
NEW BIT:		1			0
REASON:	(1+1 -> 1)			(0+0 -> 0)	

But what if one of the initial bits is set to one and the other is set to zero? In this case the status of the new bit is not clear. The software must decide whether to plot the new point or to leave it blank. This problem is illustrated below:

INITIAL BITS:	1	0	(or)	0	1
NEW BITS:		?			?
REASON:	(1+0 -> ?)			(0+1 -> ?)	

One solution to this dilemma is to create a RATIO variable. This variable will tell the software how to act when such a problem arises. The algorithm used is shown below:

```
IF [SUM OF BITS] >= RATIO, THEN PLOT NEW POINT
IF [SUM OF BITS] < RATIO, THEN LEAVE NEW POINT BLANK
```

Thus, by computing the sum of each bit pair and comparing it to the value of the RATIO variable it becomes possible to compute the value of the new point. This is illustrated in figures C and D.

Figure E illustrates two HiRes bytes aligned vertically. The same algorithm which was used to shrink a one dimensional byte can be used to shrink two dimensional images. Figure F illustrates a sample bit pattern stored in these two bytes. Each bit pair is divided into a 2 X 2 block. These blocks must each be shrunk down to a single point using the RATIO technique. This is illustrated in figures G and H.

Because slightly larger dimensions are being used it is possible to generate larger "block sums." The following block sums can be generated in a 2 X 2 block:

INITIAL:	0 0	0 1	1 1	1 1	1 1
	0 0	0 0	0 0	1 0	1 1
	(three cases possible)				
SUM:	0	1	2	3	4

Because more values are generated by a 2 X 2 block, it is necessary to increase the value of the RATIO variable. Generally, it is desirable to set this variable to one-half of the highest possible block sum. In this case the highest possible block sum is 4, so the RATIO variable should probably be set to 2. Thus, block sums less than two will cause the new point to be left blank and block sums greater than or equal to two will cause the new point to be plotted.

*Figures located on third page of article.

This same procedure holds true with larger block sizes. For example, a block size of 8 X 8 would shrink a HiRes screen to one eighth its original size (each 8 X 8 block yields a 1 X 1 point). The largest block sum possible in an 8 X 8 block would be 64 (all bits in an 8 X 8 block turned on). Thus, a good value for the RATIO variable would be 32 (one-half of 64).

The RATIO variable can be altered to enhance the shrinking of individual pictures. As the value of the RATIO variable increases, fewer points are plotted in the shrunk picture, and as the value of the RATIO variable decreases, more points are plotted in the shrunk picture. Thus pictures with many colors and plotted points tend to shrink better with larger RATIO values, and pictures with fine lines (like graphs) tend to shrink better with lower RATIO values.

Before attempting to execute the shrinker program listed at the end of this article, it is necessary to specify several "shrink parameters." These parameters, described in the following paragraphs, can be set manually or with the use of the Applesoft program listed with this article.

The COMMAND parameter allows the operator to display, clear, or shrink HiRes screens. This parameter determines what the shrinker program will do. The value of the COMMAND parameter should be stored in memory location \$0000. The various functions of this parameter are listed below:

VALUE	FUNCTION
0	Display HiRes Screen 1
1	Display HiRes Screen 2
2	Clear HiRes Screen 1
3	Clear HiRes Screen 2
4	Shrink a HiRes Screen
5-255	Future Expansion (No current function)

The WINDOW parameters enable the operator to select which section of a HiRes screen is to be shrunk. The coordinates of the upper left hand edge of this window must be stored in memory locations \$0001, \$0002, and \$0003 (with the X-coordinates in memory locations \$0001 - \$0002, and the Y-coordinate in memory location \$0003). The coordinates of the lower right hand edge of this window must be stored in memory locations \$0004, \$0005, and \$0006 (with the X-coordinates in memory locations \$0004 - \$0005, and the Y-coordinate in memory location \$0006). Note that because any given memory location can only contain values between \$00 and \$FF hex (255 in decimal), it is necessary to allocate two memory locations for the X-coordinate (which can range from 0 to 279).

For example, if the entire HiRes screen is to be shrunk, the WINDOW parameters would be 0,0 and 279,191 (see figure I). Thus, memory location \$0001 through \$0006 would contain:

WINDOW FUNCTION	MEMORY LOCATION(s)	VALUE(s)
XSTART	\$0001 - \$0002	00 00
YSTART	\$0003	00
XEND	\$0004 - \$0005	17 01 (\$117 = 279)
YEND	\$0006	BF (\$BF = 191)

Figure J illustrates a "shrinking window" with coordinates 100, 100 and 150, 150 (thus the HiRes points between 100, 100 and 150, 150 will be shrunk). In this example, memory locations \$0001 through \$0006 would contain:

WINDOW FUNCTION	MEMORY LOCATION(s)	VALUE(s)
XSTART	\$0001 - \$0002	64 00 (\$0064 = 100)
YSTART	\$0003	64 (\$0064 = 100)
XEND	\$0004 - \$0005	96 00 (\$0096 = 150)
YEND	\$0006	96 (\$0096 = 150)

The DESTINATION parameters enable the operator to define where the shrunk picture is to be stored. The coordinates of the upper left hand point of the shrunk picture must be stored in memory locations \$0007, \$0008, and \$0009 (with the X-coordinates in memory locations \$0007 - \$0008, and the Y-coordinate in memory location \$0009).

The FACTOR parameters enable the operator to define the amount of horizontal and vertical shrinkable desired. The mathematical formula which relates the FACTOR parameters to the resulting picture is:

$$\frac{1}{\text{FACTOR}} = \text{New size of the picture}$$

Thus, a shrink factor of 2 will yield a picture one-half it's original size, and a shrink factor of 3 will yield a picture one-third it's original size, and so on. A shrink factor of 1 will result in no shrinkage and a shrink factor of zero is invalid (shrinker will automatically change a shrink factor of zero to a shrink factor of 1).

The horizontal shrink factor must be stored in memory location \$000A and the vertical shrink factor must be stored in memory location \$000B. Note that this enables the operator to "distort" pictures by shrinking horizontal and vertical components by different factors.

Finally, the RATIO parameter, discussed earlier in this article, must be stored in memory location \$000C. Changing the value of this parameter can drastically affect the output of the shrinker program. The general formula for computing the value of this parameter is shown below:

$$\text{RATIO} = (.5) \times (\text{XFACTOR}) \times (\text{YFACTOR})$$

Author's Note: The shrinker program listed here will shrink a HiRes image on Page One, placing the shrunk image on HiRes Page Two. It is suggested that the operator display HiRes Page Two during the actual shrinking process in order to observe the new image as it is created. Also note that in order to save a shrunk picture, the SECOND HiRes screen must be written to diskette (memory locations \$4000 - \$5FFF).

Ed.'s Note: A copy of the assembly program is available, from the author, on diskette. Send \$25.00 (check or money order) to:

Shrinker Source
P.O. Box 905
Larkspur, CA 94939

Bit 1 Bit 2 Bit 3 Bit 4 Bit 5 Bit 6 Bit 7 Bit 8

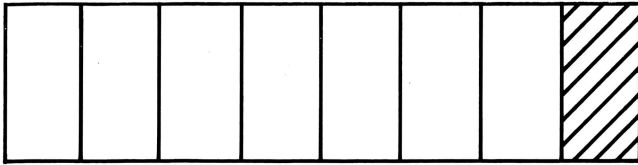


Figure A

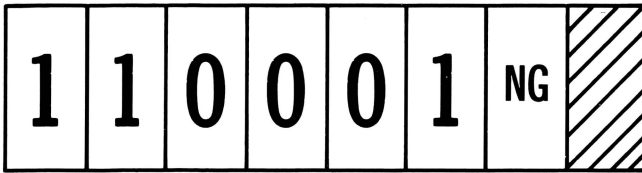


Figure B

Figure C-D "ratio"=1

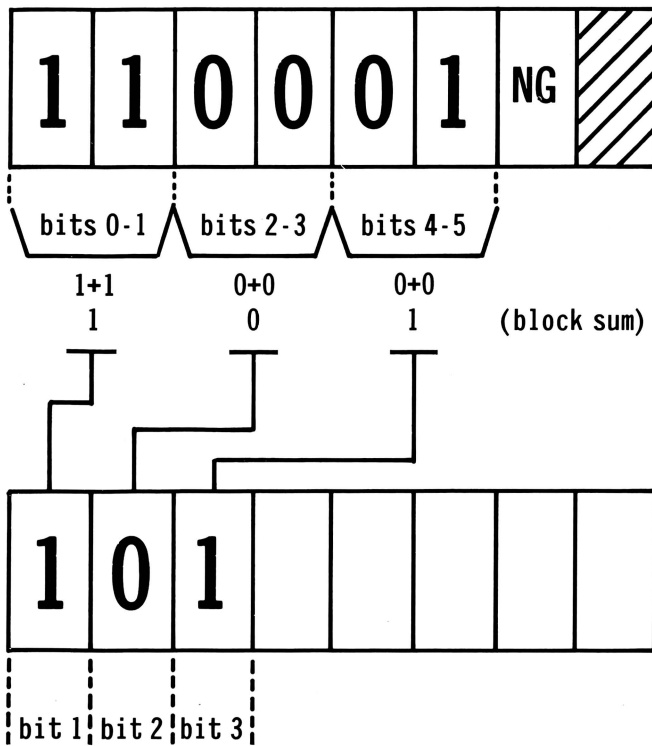


Figure G-H "ratio"=2

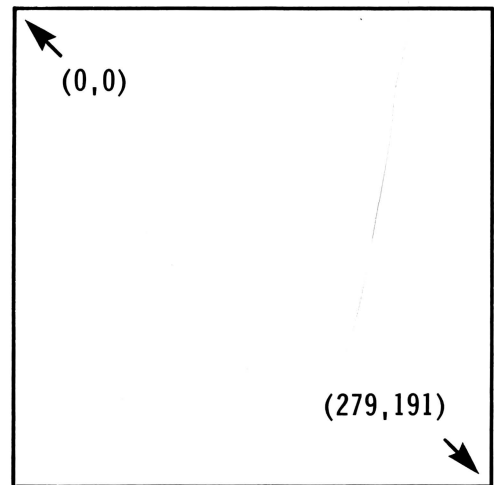
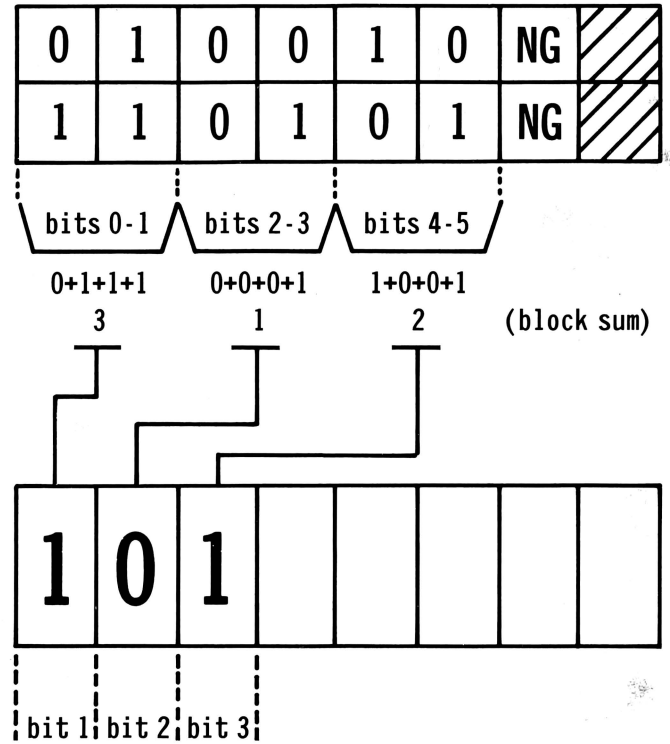


Figure I

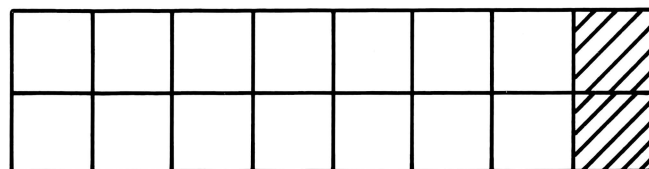


Figure E

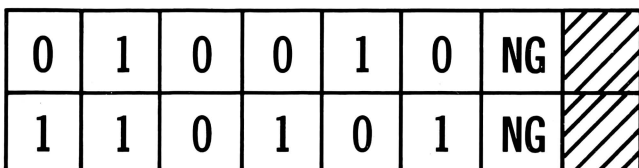


Figure F

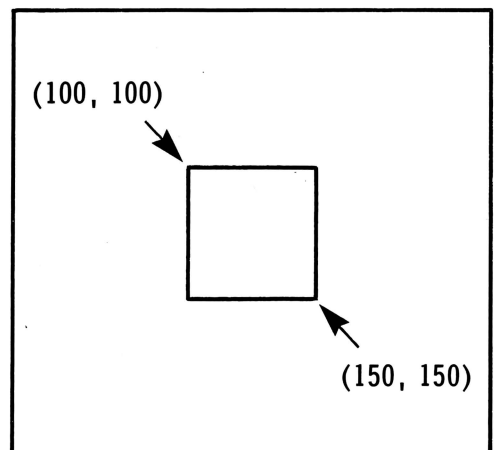


Figure J

Shrinker Memory Dump

8000.85F0

```

8000- A5 00 F0 11 C9 01 F0 1A
8008- C9 02 F0 23 C9 03 F0 26
8010- C9 04 F0 3E 60 2C 50 C0
8018- 2C 52 C0 2C 54 C0 2C 57
8020- C0 60 2C 50 C0 2C 52 C0
8028- 2C 55 C0 2C 57 C0 60 A9
8030- 20 85 11 4C 3D 80 A9 40
8038- 85 11 4C 3D 80 A9 00 85
8040- 10 A0 00 A2 20 A9 00 91
8048- 10 C8 D0 F9 E6 11 CA D0
8050- F4 60 A5 01 A4 02 20 69
8058- 81 85 01 84 02 A5 07 A4
8060- 08 20 69 81 85 07 84 08
8068- A5 04 A4 05 20 69 81 85
8070- 04 84 05 A5 09 20 76 81
8078- 85 09 A5 06 20 76 81 85
8080- 06 A5 03 20 76 81 85 03
8088- A5 0A D0 02 E6 0A A5 0B
8090- D0 02 E6 0B A5 03 85 16
8098- A5 09 85 19 A5 01 85 14
80A0- A5 02 85 15 A5 07 85 17
80A8- A5 08 85 18 A9 00 85 1D
80B0- A9 00 85 1E A5 0B 85 0F
80B8- A5 16 85 1C A5 0A 85 1F
80C0- A5 14 85 1A A5 15 85 1B
80C8- 20 9B 81 F0 02 E6 1E A5
80D0- 1B C5 05 D0 09 A5 1A C5
80D8- 04 D0 03 4C E7 80 20 62
80E0- 81 C6 1F A5 1F D0 E1 A5
80E8- 1C C5 06 D0 03 4C 61 81
80F0- E6 1C C6 0F A5 0F D0 C4
80F8- A5 1A 85 14 A5 1B 85 15
8100- A5 19 85 1C A5 17 85 1A
8108- A5 18 85 1B A9 FF 85 1D
8110- A5 1E C5 0C 90 06 20 7D
8118- 81 4C 1F 81 20 89 81 A5
8120- 1B F0 09 A5 1A C9 17 90
8128- 03 4C 46 81 20 62 81 A5
8130- 1A 85 17 A5 1B 85 18 A5
8138- 15 C5 05 F0 03 4C AC 80
8140- A5 14 C5 04 D0 F7 A5 19
8148- C9 BF D0 03 4C 61 81 E6
8150- 19 18 A5 16 65 0B 85 16
8158- A5 16 C5 06 F0 03 4C 9C
8160- 80 60 E6 1A D0 02 E6 1B
8168- 60 C0 00 F0 08 C9 17 90
8170- 04 A9 17 A0 01 60 C9 BF
8178- 90 02 A9 BF 60 20 A5 81
8180- A4 12 B1 10 05 13 91 10
8188- 60 20 A5 81 A5 13 49 FF
8190- 85 13 A4 12 B1 10 25 13
8198- 91 10 60 20 A5 81 A4 12
81A0- B1 10 25 13 60 A5 1C 0A
81A8- A8 B0 11 B9 06 82 85 10
81B0- C8 18 B9 06 82 69 20 85
81B8- 11 18 90 0E B9 06 83 85
81C0- 10 C8 18 B9 06 83 69 20
81C8- 85 11 A5 1D F0 07 18 A5
81D0- 11 69 20 85 11 A5 1A A6
81D8- 1B 0A A8 8A 2A F0 1B 4A
81E0- D0 0C B9 8E 83 85 12 C8
81E8- B9 8E 83 85 13 60 B9 8E
81F0- 84 85 12 C8 B9 8E 84 85
81F8- 13 60 B9 BE 84 85 12 C8
8200- B9 BE 84 85 13 60 00 00
8208- 00 04 00 08 00 0C 00 10
8210- 00 14 00 18 00 1C 80 00
8218- 80 04 80 08 80 0C 80 10
8220- 80 14 80 18 80 1C 00 01
8228- 00 05 00 09 00 0D 00 11
8230- 00 15 00 19 00 1D 80 01
8238- 80 05 80 09 80 0D 80 11
8240- 80 15 80 19 80 1D 00 02
8248- 00 06 00 0A 00 0E 00 12
8250- 00 16 00 1A 00 1E 80 02
8258- 80 06 80 0A 80 0E 80 12
8260- 80 16 80 1A 80 1E 00 03

```

```

8268- 00 07 00 0B 00 0F 00 13
8270- 00 17 00 1B 00 1F 80 03
8278- 80 07 80 0B 80 0F 80 13
8280- 80 17 80 1B 80 1F 28 00
8288- 28 04 28 08 28 0C 28 10
8290- 28 14 28 18 28 1C A8 00
8298- A8 04 A8 08 A8 0C A8 10
82A0- A8 14 A8 18 A8 1C 28 01
82A8- 28 05 28 09 28 0D 28 11
82B0- 28 15 28 19 28 1D A8 01
82B8- A8 05 A8 09 A8 0D A8 11
82C0- A8 15 A8 19 A8 1D 28 02
82C8- 28 06 28 0A 28 0E 28 12
82D0- 28 16 28 1A 28 1E A8 02
82D8- A8 06 A8 0A A8 0E A8 12
82E0- A8 16 A8 1A A8 1E 28 03
82E8- 28 07 28 0B 28 0F 28 13
82F0- 28 17 28 1B 28 1F A8 03
82F8- A8 07 A8 0B A8 0F A8 13
8300- A8 17 A8 1B A8 1F 50 00
8308- 50 04 50 08 50 0C 50 10
8310- 50 14 50 18 50 1C D0 00
8318- D0 04 D0 08 D0 0C D0 10
8320- D0 14 D0 18 D0 1C 50 01
8328- 50 05 50 09 50 0D 50 11
8330- 50 15 50 19 50 1D D0 01
8338- D0 05 D0 09 D0 0D D0 11
8340- D0 15 D0 19 D0 1D 50 02
8348- 50 06 50 0A 50 0E 50 12
8350- 50 16 50 1A 50 1E D0 02
8358- D0 06 D0 0A D0 0E D0 12
8360- D0 16 D0 1A D0 1E 50 03
8368- 50 07 50 0B 50 0F 50 13
8370- 50 17 50 1B 50 1F D0 03
8378- D0 07 D0 0B D0 0F D0 13
8380- D0 17 D0 1B D0 1F A0 20
8388- 00 00 00 00 00 00 12 04
8390- 12 08 12 10 12 12 12 40
8398- 13 01 13 02 13 04 13 08
83A0- 13 10 13 12 13 14 14 01
83A8- 14 02 14 04 14 08 14 10
83B0- 14 20 14 40 15 01 15 02
83B8- 15 04 15 08 15 10 15 20
83C0- 15 40 16 01 16 02 16 04
83C8- 16 08 16 10 16 20 16 40
83D0- 17 01 17 02 17 04 17 08
83D8- 17 10 17 20 17 40 18 01
83E0- 18 02 18 04 18 08 18 10
83E8- 18 20 18 40 19 01 19 02
83F0- 19 04 19 08 19 10 19 20
83F8- 19 40 1A 01 1A 02 1A 04
8400- 1A 08 1A 10 1A 20 1A 40
8408- 1B 01 1B 02 1B 04 1B 08
8410- 1B 10 1B 20 1B 40 1C 01
8418- 1C 02 1C 04 1C 08 1C 10
8420- 1C 20 1C 40 1D 01 1D 02
8428- 1D 04 1D 08 1D 10 1D 20
8430- 1D 40 1E 01 1E 02 1E 04
8438- 1E 08 1E 10 1E 20 1E 40
8440- 1F 01 1F 02 1F 04 1F 08
8448- 1F 10 1F 20 1F 40 20 01
8450- 20 02 20 04 20 08 20 10
8458- 20 20 20 40 21 01 21 02
8460- 21 04 21 08 21 10 21 20
8468- 21 40 22 01 22 02 22 04
8470- 22 08 22 10 22 20 22 40
8478- 23 01 23 02 23 04 23 08
8480- 23 10 23 20 23 40 24 01
8488- 24 02 24 04 24 08 24 10
8490- 24 20 24 40 25 01 25 02
8498- 25 04 25 08 25 10 25 20
84A0- 25 40 26 01 26 02 26 04
84A8- 26 08 26 10 26 20 26 40
84B0- 27 01 27 02 27 04 27 08
84B8- 27 10 27 20 27 40 00 01
84C0- 00 02 00 04 00 08 00 10
84C8- 00 20 00 40 01 01 01 02
84D0- 01 04 01 08 01 10 01 20
84D8- 01 40 02 01 02 02 02 04

```

```

84E0- 02 08 02 10 02 20 02 40
84E8- 03 01 03 02 03 04 03 08
84F0- 03 10 03 20 03 40 04 01
84F8- 04 02 04 04 04 08 04 10
8500- 04 20 04 40 05 01 05 02
8508- 05 04 05 08 05 10 05 20
8510- 05 40 06 01 06 02 06 04
8518- 06 08 06 10 06 20 06 40
8520- 07 01 07 02 07 04 07 08
8528- 07 10 07 20 07 40 08 01
8530- 08 02 08 04 08 08 08 10
8538- 08 20 08 40 09 01 09 02
8540- 09 04 09 08 09 10 09 20
8548- 09 40 0A 01 0A 02 0A 04
8550- 0A 08 0A 10 0A 20 0A 40
8558- 0B 01 0B 02 0B 04 0B 08
8560- 0B 10 0B 20 0B 40 0C 01
8568- 0C 02 0C 04 0C 08 0C 10
8570- 0C 20 0C 40 0D 01 0D 02
8578- 0D 04 0D 08 0D 10 0D 20
8580- 0D 40 0E 01 0E 02 0E 04
8588- 0E 08 0E 10 0E 20 0E 40
8590- 0F 01 0F 02 0F 04 0F 08
8598- 0F 10 0F 20 0F 40 10 01
85A0- 10 02 10 04 10 08 10 10
85A8- 10 20 10 40 11 01 11 02
85B0- 11 04 11 08 11 10 11 20
85B8- 11 40 12 01 12 02 12 04
85C0- 12 08 12 10 12 12 12 14
85C8- 12 20 12 40 13 01 13 02
85D0- 13 04 13 08 13 10 13 12
85D8- 13 20 13 40 14 01 14 02
85E0- 14 04 14 08 14 10 14 12
85E8- 14 20 14 40 15 01 15 02
85F0- 15 04 15 08 15 10 15 12

```

FREE?DISKETTES

SAVE MONEY! Apple II series users can use the diskette flip side, if another "write enable" notch is correctly made.

The **DISK-NOTCHER** by QUORUM quickly **SOLVES** that PROBLEM. It's like **FREE DISKETTES!**

- Stainless Steel Guide
- Easy Leverage Handle
- Clippings Catcher
- Square Notch Cut
- Black Finish

Certifix™

BE SAFE! Your "FREE" disk is **CERTIFIED** 100% ERROR FREE with **CERTIFIX** by QUORUM. It **LOCKS OUT** DISK FLAWS and lets you use the rest. Displays status report & saves it to disk. Next, **CERTIFIX** automatically formats then offers to initialize with genuine Apple DOS 3.3 too. Great for testing economy disks. **CERTIFY, FIX & INITIALIZE** every disk with **CERTIFIX!**

FREE! 64 "Write Protect" Tabs 32 Diskette Labels, if both ordered.

Only \$29⁹⁵ for both!

DISK NOTCHER is \$14.95
CERTIFIX™ is just \$24.95
Add \$1.50 s/h • CA add 6 1/2% tax

SEE YOUR APPLE DEALER!
OR ORDER DIRECT FROM QUORUM

1-800-821-5226

24 Hours a Day
Orders only
Ext. 404
Visa/MC

QUORUM INTERNATIONAL, Unltd.
INDUSTRIAL STATION P.O. BOX 2134 AO
OAKLAND, CA 94614

Circle HelpCard No.008

Shrinker Program Listing

```

10 REM
20 REM
30 REM SHRINKER <VERSION 1.0>
40 REM CREATED BY JOHN UHLEY
50 REM
60 REM FRONT END PACKAGE
70 REM REQUIRES SHRINKER.O
80 REM TO BE LOADED AT $8000
90 REM
100 PRINT : PRINT CHR$ (4);"BLOAD SHRINKER.O,A$8000"
110 GOSUB 1240
120 HOME
130 VTAB 3
140 INVERSE
150 HTAB 11
160 PRINT " "
170 HTAB 11
180 PRINT " SHRINKER FRONT END "
190 HTAB 11
200 PRINT " "
210 NORMAL
220 PRINT : PRINT
230 PRINT " (B) BLANK (ERASE) GRAPHICS SCREEN"
240 PRINT " (C) CATALOG DISKETTE"
250 PRINT " (D) DISPLAY GRAPHICS SCREEN"
260 PRINT " (E) ENTER PARAMETERS"
270 PRINT " (Q) QUIT TO BASIC"
280 PRINT " (R) READ PICTURE FROM DISKETTE"
290 PRINT " (S) SHRINK PICTURE"
300 PRINT " (T) TEXT SCREEN ON"
310 PRINT " (?) DISPLAY CURRENT PARAMETERS"
315 PRINT " (W) WRITE PICTURE TO DISKETTE"
320 PRINT " ( ) YET ANOTHER TEXT SCREEN ON"
330 PRINT
340 PRINT " COMMAND: ";
350 GET A$
360 IF A$ = " " THEN A$ = "T"
370 IF A$ = "Q" THEN HOME : END
380 IF A$ = "T" THEN TEXT : GOTO 120
390 IF A$ = "C" THEN HOME : PRINT : PRINT CHR$ (4);
  "CATALOG": GET A$: GOTO 120
400 IF A$ = "S" THEN 790
410 IF A$ = "R" THEN 660
420 IF A$ = "D" THEN 690
430 IF A$ = "B" THEN 740
440 IF A$ = "E" THEN 850
450 IF A$ = "W" THEN 630
460 IF A$ = "?" THEN 1310
470 GOTO 120
480 POKE 34,6: HOME : POKE 34,0
490 VTAB 10
500 IF A$ = "S" THEN PRINT "SAVE ";
510 IF A$ = "L" THEN PRINT "LOAD ";
520 PRINT "PAGE ONE OR TWO (1/2)? ";
530 GET I$
540 IF I$ = "1" THEN S$ = "A$2000": GOTO 580
550 IF I$ = "2" THEN S$ = "A$4000": GOTO 580
560 POP
570 GOTO 120
580 IF A$ = "D" THEN RETURN
590 IF A$ = "B" THEN RETURN
600 PRINT : PRINT : PRINT "FILE NAME: ";
610 INPUT F$
620 RETURN
630 GOSUB 480
640 PRINT : PRINT CHR$ (4);"BSAVE ";F$;",";S$;",";L$1FFF"
650 GOTO 120
660 GOSUB 480
670 PRINT : PRINT CHR$ (4);"BLOAD ";F$;",";S$
680 GOTO 120
690 REM DISPLAY A SCREEN
700 GOSUB 480
710 IF I$ = "1" THEN POKE 0,0
720 IF I$ = "2" THEN POKE 0,1
730 CALL 32768: GOTO 120

740 REM CLEAR
750 GOSUB 480
760 IF I$ = "1" THEN POKE 0,2
770 IF I$ = "2" THEN POKE 0,3
780 CALL 32768: GOTO 120
790 REM SHRINK
800 REM TURN ON PAGE 2 AND
810 REM LET THE USER WATCH IT...
820 REM
830 POKE 0,1: CALL 32768
840 POKE 0,4: CALL 32768: GOTO 120
850 REM GET PARMS
860 POKE 34,6: HOME : POKE 34,0
870 INPUT "WINDOW TOP (X,Y): ";XS,YS
880 PRINT
890 INPUT "WINDOW BOTTOM (X,Y): ";XE,YE
900 PRINT
910 INPUT "DESTINATION COORDIANTES (X,Y): ";XN,YN
920 PRINT
930 INPUT "SHRINKING FACTORS (X,Y) ";XF,YF
940 PRINT
950 PRINT "RATIO (SUGGESTED MEAN VALUE OF ";
960 PRINT ".5 * (XF * YF); ": ";
970 INPUT RA
980 PRINT
990 XS = ABS (XS):YS = ABS (YS)
1000 XE = ABS (XE):YE = ABS (YE)
1010 XN = ABS (XN):YN = ABS (YN)
1020 XF = ABS (XF):YF = ABS (YF)
1030 RA = ABS (RA)
1040 IF XS > 279 THEN XS = 279
1050 IF XE > 279 THEN XE = 279
1060 IF XN > 279 THEN XN = 279
1070 IF XF > 255 THEN XF = 255
1080 IF YS > 191 THEN YS = 191
1090 IF YE > 191 THEN YE = 191
1100 IF YN > 191 THEN YN = 191
1110 IF YF > 255 THEN YF = 255
1120 IF RA > 255 THEN RA = 255
1130 POKE 12,RA: POKE 11,YF
1140 POKE 10,XF
1150 POKE 3,YS: POKE 6,YE: POKE 9,YN
1160 POKE 2,0: IF XS > 255 THEN POKE 2,1
1170 POKE 5,0: IF XE > 255 THEN POKE 5,1
1180 POKE 8,0: IF XN > 255 THEN POKE 8,1
1190 IF XS > 255 THEN XS = XS - 256
1200 IF XE > 255 THEN XE = XE - 256
1210 IF XN > 255 THEN XN = XN - 256
1220 POKE 1,XS: POKE 4,XE: POKE 7,XN
1230 GOTO 120
1240 XS = 0:YS = 0:XN = 0
1250 XE = 0:YE = 0:XF = 1:YF = 1:RA = 1
1260 POKE 0,0: POKE 1,XS: POKE 2,0
1270 POKE 3,0: POKE 4,23: POKE 5,1: POKE 6,191
1280 POKE 7,0: POKE 8,0: POKE 9,0:
1290 POKE 10,1: POKE 11,1: POKE 12,1
1300 RETURN
1310 POKE 34,6: HOME : POKE 34,0
1320 PRINT "CURRENT PARAMETER SETTINGS: "
1330 PRINT : PRINT
1340 PRINT "WINDOW TOP AT (";XS;",";YS")"
1350 PRINT
1360 PRINT "WINDOW BOTTOM AT (";XE;",";YE;")"
1370 PRINT
1380 PRINT "DESTINATION COORDINATES AT (";XN;",";YN;")"
1390 PRINT
1400 PRINT "SHRINK FACTORS AT (";XF;",";YF;")"
1410 PRINT
1420 PRINT "RATIO = ";RA
1430 PRINT
1440 HTAB 10
1450 PRINT "HIT ANY KEY TO RETURN"
1460 PRINT
1470 HTAB 19: PRINT CHR$ (91);" "; CHR$ (93);
1480 POKE 36,19: GET A$: GOTO 120

```


APPLESEED^{T.M.}

Apple Compatible Hardware for Dedicated Applications

Design and program a system on a standard Apple computer and then market it with the low-cost APPLESEED system...

Designed for use in systems where a full Apple computer may not be necessary or desired, the APPLESEED Bus system retains all the essential features of an Apple system, including mother board compatibility with almost every plug-in board available for the Apple II.

Programs are developed in assembly language on a standard Apple II. Upon completion, a set of EPROM's are blown and inserted into the APPLESEED Bus system, which then takes control of program execution.

You buy only what you need for your application; gone are the built-in keyboard, the consumer-oriented packaging and graphics subsystems. Cost, size and power consumption are substantially reduced while flexibility is greatly increased. Compatibility with a multitude of sophisticated programming and hardware add-ons, widely available for the Apple II, has been fully retained, providing a wide range of options for designing customized systems. (Applesoft[®] PROM's are not included.)

A sampling of APPLESEED Bus components:

CPU BOARD The 6502 has been removed from the mother board and included in this card, which also contains the clock circuitry for the system.

64K RAM BOARD 64K of dynamic RAM with provision for control to be used in the normal Apple II conventions; deleting COOO-CFFF and software control over the DOOO-FFFF area.

EPROM BOARD Jumper selectable for 2716 (EPROM) or 34199 (PROM); blow 2716 assembly language programs and then run them in this EPROM board. Jumpers allow selection of software on/off, initialize on/off and other controls.

UART BOARD Software/hardware select all standard EIA baud rates. The board supports four 6850 UART's which allow four independent input and output EIA lines. Each UART is fully programmable for parity, bit length, baud rate, etc.

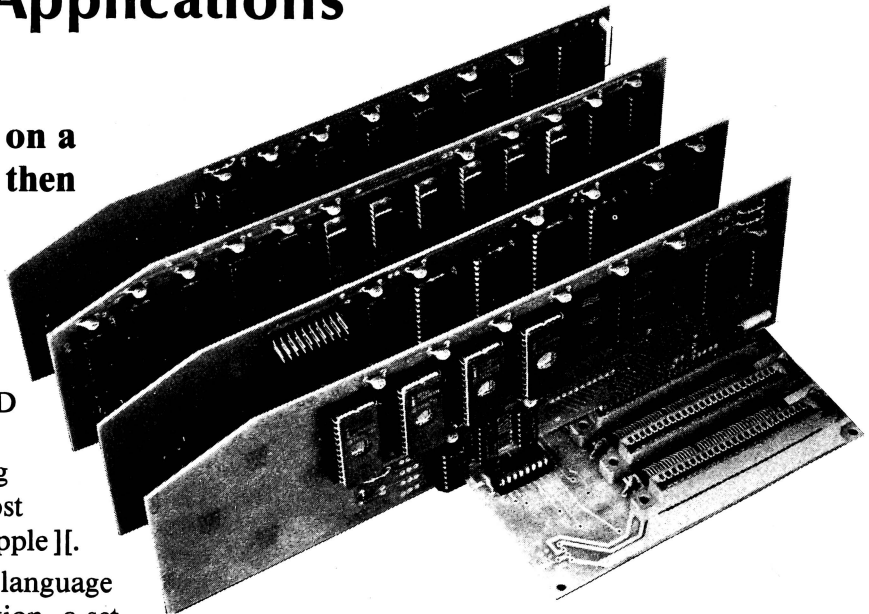
UNIVERSAL BOARD The APPLESEED Universal board contains the following: One 2716 socket for an F8 PROM, one 2K x 8 bit RAM (0-7FF), one UART channel for serial communications, 8 parallel INPUT lines (TTL), 8 parallel OUTPUT lines (TTL), device decode for one additional standard slot-dependent board, support for standard Apple II style keyboard, and a power supply connection. Each feature is independent and any combination may be used simultaneously. The Universal board is designed to be used with the APPLESEED CPU board.

TEXT BOARD The TEXT board is designed to add the conventional TEXT (page 1 and page 2) to an APPLESEED system. The board generates composite video to plug into a standard monitor or T.V. modulator. The board provides 40 columns x 24 rows in each page and is not slot dependent.

MOTHER BOARD 10-slot motherboard is fully compatible with most Apple add-on cards currently available.

Please call or write for prices and more detailed information on these and other APPLESEED Bus products.

DOUGLAS ELECTRONICS 718 Marina Blvd. • San Leandro, CA 94577 • (415) 483-8770
APPLE is a registered trademark of Apple Computer Corporation



Think Tank

Review by Dirk van Nouhuys

SUMMARY

Think Tank provides an automatic outline roughly the way VisiCalc and similar programs provide automatic spreadsheets. As in the case of electronic spreadsheets, this seemingly simple idea opens the door to a very large range of applications. Anyone who produces reports or any document longer than a page or two that has headings and subheadings is likely to find it superior to the word processing systems available for the II. Think Tank may be useful in many situations where you need a very flexible data base system to handle text of variable length such as a "to do" file or when coping with electronic mail, as discussed below. It is easier to move files in and out of Think Tank than most word processors. When it comes time to print, Think Tank does not have the flexibility of AppleWriter or Word Juggler but offers decent basic formatting.

The program runs on the II, II Plus (with language cards), //e, //c and, with different program disks, on the ///. I tested it in detail only on the //e. It will run with one floppy disk drive, but two or a hard disk are more natural to it. Most of the 80-column cards for II and II Plus will not work with Think Tank.

OF STRUCTURE AND WORD PROCESSING

Part of the struggle to make computers actually personal has been to show the user information in a form that makes sense to him or her. When we turn to thoughts in the form of words, the model in personal computers has been an electronic typewriter. When people admire a word handling-system on a personal computer, you hear them say, "It's like a real word processor," meaning that it does the things a typewriter does (the screen looks like a typewritten page). But other models of handling written thought are possible; one important one is the outline, not as you might make it on a typewriter, but as you might make them on a blackboard, or an electronic blackboard, where you can easily add headings anywhere, or move them around carrying the sub-headings with them.

The typewriter-page model is fine for business letters and short memos, and writers find it adequate for fiction. It is not so well suited to reports of more than a few pages or any piece of writing over a couple of pages, such as this article. Furthermore the outline lends itself flexibly to bringing order to various sorts of information.

One simple difference between Think Tank and word processors is pages. Most word processors strive to let you work

with pages, although pages are not at all natural computer screens. Nor are they natural to human thought. Pages are arbitrary limitations of pieces of paper. Think Tank allows you to format pages, but only as a last step, when you have put your thoughts in order.

HOW IT WORKS

Display

Think Tank sets aside the upper twenty lines of the screen for text. The text appears as in figure 1, which shows the left-hand two level of the outline of this review. One of the most powerful features of Think Tank is that you can command the screen to show or conceal the items under a heading according to level. Thus figure 2 shows you all the headings under "Some Issues" (at that stage of writing the review). You can look below to see the final form. Hiding many items allows you to scan all the high-level headings of even a large document, which you can later show to work on. Pluses (+) beside headings indicates something is hidden beneath them.

- + Think Tank Review
 - + Summary
 - + Of Structure and Word Processing
 - + How it Works
 - + Display
 - + Continuous Feedback
 - + Editing
 - + The Manual
 - + Printing
 - + Backing up and Handling Files
 - + Access to Pascal Files and the World
 - + Applications
 - + Some Issues
 - + Modes
 - + Who Was First?
 - + Quit to Limbo
 - + Setting the Date
 - + Possibilities
 - + Conclusion

FIGURE 1

- + Some Issues
 - + Modes
 - Flashing vs Still Cursor
 - Why Three Editors?
 - Who Was Really First with What?
 - Working From Disks You Write On
 - "Edit" vs "Expand" etc.
 - Could Use Heading Numbers
 - Limited Formatting
 - Limited Page Headers
 - Retains Copy/Delete to Move

FIGURE 2

Command feedback appears on the lower four lines. There is some debate these days between advocates of menu-driven systems, such as Quickfile, where the user makes things happen by moving the cursor to selecting an item on a menu, and command-driven systems such as Visicalc or AppleWriter where the user makes something happen by

typing the first character of a command. Think Tank ingeniously offers you both. Typing "/" at almost any point displays a command menu; you can move a cursor to the command and make it happen. Alternatively, in most cases, typing the first character of the command will make it happen. Several commands bring up menus of sub commands. You can string these command characters together, e.g. if your cursor is sitting on the heading above a paragraph as on "Some" in figure 2, and you are at the main command menu; you can delete the first letter of the following paragraph by typing "/ep > d," where ">" represents holding down the control key. As with similar sequences in say, VisiCalc, these command sequences are a little tricky to learn. These are the sort of things that an experienced user will employ instinctively, whereas an occasional user will stick to the menu. In the way of further help, one or more lines of explanation of what the current command does is always before you in the command area. In general the system gives you a lot of feedback and little bits of advice about what you are doing without that feedback seeming obtrusive or slowing you down.

Continuous Feedback

Think Tank gives you nice feedback of other kinds. Generally when processes are going on that take a while, it does something to show how you are progressing. When you are writing to a file on a disk, the lines flash by in a window in the command area. When you search for a piece of text, the number of lines you have searched flashes up. When you search in a paragraph, soft clicks count the lines. None of these things make your work go faster, but they give you a reassuring sense of interaction.

Editing

Unfortunately there are three editors in Think Tank; one for editing regular text, one for editing the outline, and one for editing the text in the outline headings.

The editor for the text in outline headings is very simple; essentially you can insert text where the cursor sits and delete characters. Probably adequate for such short pieces of text.

To these functions the editor for regular text adds the ability to search for pieces of text, search for one or more occurrences of a piece of text and replace it, the ability to type over characters with other characters, and the ability to select blocks of text to be deleted or copied into a buffer for later insertion somewhere else in the paragraph or in another paragraph.

The command to move an item from one place to another, absent from the regular text editor (except in two steps via a buffer), is present in the command to control the outline. It makes all the difference when you can move a heading, and what ever is under it, easily anywhere in the outline. It is also possible to merge the text below separate headings, and search and replace a string anywhere in the document, heading or regular text.

THE MANUAL

This is a good manual, particularly when it comes to reference, but it has some rough spots. I measure manuals against completeness, accuracy, and accessibility. The manual is to be congratulated on completeness. It is divided

into an introductory section, a tutorial, a reference section, error messages, and some appendices for technically minded users. The reference sections and the error messages are full and well written. The only inaccuracies I ran into came from use of photos of II Plus screens that must serve to illustrate that machine, the //e, and the ///.

By accessibility, I mean: is it easy for normal users to learn what they need to work? The reference and error message sections of the manual are fine in this respect. The tutorial tends to be talky and abstract. Some people want to understand how things work, but others only want to know how to do things. People who are impatient with abstractions will have trouble with the tutorial.

The index is good. I never failed to find something to help me. On a couple of occasions things are over-indexed, that is the index sent me to a trivial entry.

The manual is printed from the output of a letter-quality printer and bound with metal rings; it lies nicely flat. Almost all the illustrations are photos of the screen, which are hard to read.

PRINTING

Think Tank allows you to send a file to the printer. You can control what goes to the printer according to outline level. That is, you can print only, say, high-level items and no regular text, or three levels of heading and all text, etc. Thus I created Figures 1 and 2 by printing the outline with some of the subordinate matter hidden from view. Basic formatting tools are available: you can vary page length, indenting, margins, etc. It will number your sections for you and, of course, create a table of contents. It will number pages and create a running header or footer at the top of each page, but the contents of the header and footer are derived automatically from the outline... you cannot control them.

BACKING UP AND HANDLING FILES

Backup is unnecessarily complicated and impossible without closing the outline. In the first place, if you are running on a system with floppies only, the system begins by assuming that you are going to devote a whole disk to each outline. You may want to play around with a short outline and disks cost money; it is not a good assumption. You can deceive the system into putting several outlines on one floppy by a command that declares the floppy to be a hard disk, but that is needlessly tricky.

You can back up files one of two ways, by creating through the port command (below) a text file with special, funny text in it, which Think Tank can later reconstruct into a new Think Tank file, or by leaving Think Tank and backing up your files with the Pascal operating system or some other utility.

File handling in general is not as easy as it should be. For example you can't delete a Think Tank file from inside Think Tank. Nor can you see a list of all your outlines (It will show them all to you one at a time or show you a list of all the files on a given disk).

ACCESS TO PASCAL TEXT FILES AND THE WORLD

You might very well want to work up an outline in Think

Tank, play with it and flesh it out until you were satisfied, and then send it to another system, or move text from some source into your outline. You can do it with Think Tank. Think Tank files are data base files, that is they exist in a format peculiar to Think Tank. But a command converts them to Apple II (or ///) Pascal text files. In this form you can pass them on to other tools that recognize Pascal text files, say the Pascal Editor, for further formatting. In creating these files you have all the formatting tools you have for printing. Think Tank includes a command for changing the Pascal files to DOS. ProDOS users will have available utilities to convert to and from ProDOS files. Similarly, Think Tank will read Pascal text files from any source, but it will not read in outline structure from the source. You get a paragraph no matter what the organization of the source.

APPLICATIONS

Think Tank makes me think of applications. I wrote this review on Think Tank about 90% of the way. Just near the end I moved it to the Apple /// Pascal Editor to run it through a spelling check and because the good people at *Apple Orchard* are accustomed to getting Apple /// ASCII files from me. I am accustomed to using that editor, AppleWriter, or the LisaWrite for such work. Even though I was new to it, I preferred Think Tank to any of those for this job. If I had wanted to do a business letter, LisaWrite would have been preferable because of formatting. If I had wanted to write a program I would use the Pascal Editor for various programming features. I happen to be just starting a novel and a book on a personal computer. I think I'll stick to a familiar editor for the novel where structure doesn't matter, but Think Tank is the leading candidate for the book.

I get quite a bit of electronic mail. I am thinking of setting up a Think Tank Outline as an orderly file system for messages I want to keep.

I have long kept a "todo" file. Every day I make a heading with things to do under it. As each day passes, I copy the unfinished (sigh!) items into the next day and only remove them when I do them or can't stand to see them any more. I accumulate old days for record purposes. Think Tank is a good candidate for that application.

SOME ISSUES

Modes

Systems designers sometimes get acrimonious about "modes". A designer of the Apple Lisa has the license plate "NOMODES". By no modes he means that typing a given character means the same thing no matter what you are doing. Think Tank depends heavily on modes. "E" may mean edit, expand, exit, or "e" depending on when you type it. I have used and watched users employ modish and nomodish systems extensively and I think modes sometimes confuse the new user or the occasional user, who may get lost. For the experienced user modes are not a problem and offer advantages in flexibility. For the user new to Think Tank, the system offers extensive and pert prompting as noted.

Who Was First?

The box is covered like wall paper with the phrase "The first idea processor". I understand the impulse that leads to

this claim: here is a product that offers a distinct tool for the first time to microprocessor users, and which must be separated in image from word processors. But this claim is exaggerated. You can judge for yourself what it means to call this an idea processor. It is not the first program of its type. By its type, I mean a program based on a data base file storing text in records of variable length and offering the user flexible use of outline structure. Such a system was developed in the late 60's on large computers by Engelbart and other at SRI (the group that invented the mouse) and is still available from Tymshare under the name Augment. A similar system was developed by Van Dam and others shortly after at the University of Pennsylvania with the name Hypertext and others have worked with the concept, all in the context of large machines.

Quit to Limbo

If you are not a Pascal programmer, when you exit Think Tank you find yourself before an incomprehensible screen. Before you, on the screen, is the command line of the Pascal Operating system, which a normal user would have no reason to recognize. A blank screen would be less confusing.

Setting the Date

This is a small point to quibble about in a good program, but designers seem drawn to difficult ways to set the date and I want to complain. Whenever you begin sessions you must explicitly set the date or leave it be, if it is correct. That extra step is going to be a bit onerous in a system you use a lot in itself. But the method of setting the date is by typing arrows, which cause the numbers to go up and down, like setting the time on your digital watch by repeatedly pushing the button on the side. Digital time pieces that have keypads use the keyboard and computers should too.

POSSIBILITIES

Really, the nicest thing about this program is the sense of possibilities it gives you. Every user thinks of his or her own. I've discussed some applications above. But this program is a solid foundation that cries out for further development. Easier writing to other systems and acquisitions from other systems; easier file handling; a built-in spelling checker. A more flexible printer formatter. Most of all it cries out for use of outline numbers within the program. When you print, Think Tank will number the headings for you outline fashion, 1, 1.1, 1.1.1 etc., if you want. Now if you could use those addresses in commands, say "move 1.3.2 to follow 2.3.1", there would be a magic black board!

CONCLUSION

This product offers a way to automate organizing your writing and other tasks that involve text in an outline format including creative problem solving. If you like outlines and write reports or other structured documents, Think Tank can make your life easier. If all you want to do is get your thoughts or the slips of paper in your top drawer in order, it might help. It can do a lot of different things for you and so it has many commands; to learn them it offers you excellent prompting and solid reference functions in the manual. My main problems with it are rough places in the design or occasions where I wish it had already taken the next step in its evolution. It's fun.

CALL 1-800-222-2602

APPLE SOFTWARE

MICROSOFT BASIC (MAC)	119.95
MULTIPLAN (MAC)	144.95
MICROSOFT CHART (MAC)	99.95
AQUATRON	24.95
ATI FOR WORDSTAR #1 & 2	54.95
BUCK ROGERS	34.95
CASH PLAN - MICROSOFT	CALL1
CHURCH MANAGEMENT BPI	359.95
COAST TO COAST	37.95
CONGO BONGO	34.95
BANK STREET WRITER	54.95
CENTIPED	27.95
CHOPLIFTER	27.95
Q-BASE II (REQ Z-80)	356.95
D.B. MASTER V.4	254.95
DEADLINE	37.95
DIG DUG	27.95
DOLLARS & SENSE	79.95
DONKEY KONG	27.95
EINSTEIN COMPILER	94.95
FIRE FIGHTER ACCOUNTING	64.95
FLIGHT SIMULATOR II	39.95
FRIDAY (REQ Z-80)	214.95
GENERAL ACCOUNTING BPI	284.95
HOME ACCOUNTANT	59.95
HOMEWORD	54.95
JANE	214.95
JOIST	27.95
JUNGLE HUNT	27.95
LEGAL OFFICE MANAGER	179.95
LODERUNNER	27.95
MAGICALC	109.95
MASTERTYPE	29.95
MATH BLASTER!	37.95
MATHEMAGIC/GRAPHMAGIC	109.95
MICRO COOKBOOK	31.95
MILLIONAIRE	44.95
MOON PATROL	29.95
MS. PAC-MAN	27.95
MULTIPLAN (APPLE DOS)	189.95
NIGHT MISSION PINBALL	27.95
ORCA/M	119.95
OWLCAT SAT (60 HR)	179.95
PAC-MAN	27.95
P-TERM PRO	99.95
PAPER GRAPHICS	39.95
PFS:FILE	89.95
POLE POSITION	27.95
PREPARING FOR THE S.A.T.	89.95
QUICK CODE (REQ Z-80)	214.95
SARGON III	37.95
SENSIBLE SPELLER	89.95
SILICON SAILAD	19.95
STAR TREK	34.95
SUPERCALC 2 (REQ Z-80)	214.95
THE HEIST	31.95
TRANSITIONS	39.95
ULTIMA III	44.95
VISICALC ADVANCED AP2e	229.95
VISICALC ENHANCED AP2e	184.95
WIZARDRY	39.95
WORDSTAR 3.31 (REQ Z-80)	329.95
ZAXXON	29.95
ZORK I	29.95
Z-TERM PRO (REQ Z-80)	109.95

APPLE HARDWARE

APPLE IIc COMPUTER	LOW111
MACINTOSH COMPUTER	LOW111
ACCELERATOR II CARD	464.95
ALS CP/M CARD W/CPM 3.0	299.95
AMDEK DVM-2 RGB 1/(AP2)	139.95
AMDEK DVM-80E RGB 1/F	149.95
APPLE DUMPLING CK	75.95
APPLI-CARD: 6 Mhz	294.95
APRICORN SERIAL CARD	77.95
BUFFERED DUMPLING 16K	179.95
CHALKBOARD POWER-PAD	79.95
CHALKBOARD APPLE-KIT	44.95
CP/M GOLD CARD 64K	389.95
DAVONG 5MB HARD DISK	1794.95
DAVONG 10MB HARD DISK	2154.95
DAVONG 15MB HARD DISK	2519.95
ECHO II SPEECH SYNTHESZR	169.95
ENHANCER II-FUN. STRIP	169.95
4TH DIMENSION DRIVE	199.95
GIBSON LIGHT PEN	179.95
INFOSTAR W/ STARCARD	329.95
KENSINGTON SYSTEM SAVER	69.95
KOLA CR/TABLET W/SPTWR	97.95
KRAFT JOYSTICK (AP2)	37.95
MACH II JOYSTICK Iie	34.95
MACH III JOYSTICK Iie	41.95
MICROBUFFER II+ (S) 16K	199.95
MICRO-SCI A2 DRIVE	194.95
MICROSOFT SOFTCARD (AP2)	269.95
MICROSOFT SOFTCARD II	354.95
MICROTEK SERIAL I/F	79.95
MOUNTAIN MUSIC SYSTEM	289.95
MOUNTAIN ROM WRITER	139.95
MPC 64K RAM TEXT Iie	139.95
NEPTUNE 64K80COL CRD Iie	184.95
NEPTUNE 192K 80COL CRD	374.95
ORANGE INTERFACE	139.95
PKASO/PRINTER I/F	139.95
PREMIUM SOFTCARD Iie	299.95
PRINCETON GR. 80 COL CRD	149.95
PROMETHEUS VERSACARD	149.95
QUADRAM 64K80COL CRD Iie	124.95
RANA ELITE I DRIVE	274.95
RANA ELITE II DRIVE	444.95
RANA ELITE III DRIVE	529.95
RANA DISK CNTR CARD	99.95
S.A.M.	634.95
SOUNDCHASER MUSIC KEYBBD	719.95
SWEET "P" 100 PLOTTER	99.95
TAXAN 410-08 RGB 2 (AP2)	144.95
TAXAN 410-80 RGB (AP2e)	249.95
TAXAN 410-64 RGB (AP2e)	34.95
TO JOYSTICK W/TOGGLE Iie	254.95
TPS MICRO DRIVE Iie	239.95
VIDEOFORM W/SOFTSWITCH	294.95
VIDEK ULTRATERM	294.95
WLD APPLE TRACKBALL	129.95
WILDCARD II	164.95
WIZARD-80 80 COL CARD	164.95

DISKETTES

SS/SD ELEPHANT 16.95	OPUS 17.95
SS/DD ELEPHANT 19.95	OPUS 20.95
DS/DD ELEPHANT 25.95	OPUS 26.95

MONITORS

AMDEK COLOR I PLUS	309.95
AMDEK COLOR II PLUS	454.95
AMDEK COLOR IV	694.95
AMDEK VIDEO 300 (GREEN)	139.95
AMDEK VIDEO 300 (AMBER)	154.95
AMDEK VIDEO 310 (AMBER)	169.95
BMC 12" GREEN	89.95
BMC 13" COLOR	239.95
BMC 13" RGB	449.95
COMREX 13" COLOR W/SOUND	289.95
COMREX 12" HI-RES AMBER	119.95
COMREX 12" HI-RES GREEN	114.95
COMREX 13" RGB CR-6600	274.95
COMREX 13" RGB CR-6800	489.95
GORILLA 12" AMBER	84.95
GORILLA 12" GREEN	79.95
NEC 12" HI-RES GREEN	154.95
NEC 12" ECONO GREEN	109.95
NEC 12" LO-RES COLOR	294.95
NEC 12" AMBER SCREEN	159.95
NEC 12" COLOR - IBM	434.95
PRINCETON GRAPHICS HK-12	509.95
PRINCETON GR. 12" AMBER	189.95
SAKATA 13" COLOR	294.95
SAKATA 13" RGB COLOR	549.95
SAKATA SUPER RGB	749.95
SAKATA 12" GREEN	119.95
SANYO CTR-36 GREEN	169.95
TAXAN 12" GREEN	124.95
TAXAN 12" AMBER	134.95
TAXAN RGB 210 MED RES	309.95
TAXAN RGB 415 HI-RES	439.95
TAXAN RGB 420 IBM	519.95
ZENITH 12" AMBER	109.95
ZENITH 12" GREEN	99.95
ZENITH RGB ZVM-135 COLOR	524.95
USI 9" AMBER PI-4	129.95
USI 9" GREEN PI-1	139.95
USI 12" AMBER PI-3	144.95
USI 12" GREEN PI-2	124.95
USI 14" LO-RES COLOR	309.95

MODEMS

ANCHOR MARK VII (RS-232)	119.95
ANCHOR MARK X (RS-232)	124.95
ANCHOR MARK XII (RS-232)	289.95
APPLE CAT II MODEM	244.95
APPLE-CAT II 212	469.95
KENSINGTON MODEM 1200	429.95
NOVATION J-CAT	119.95
PROMETHEUS MAC-PAC MODEM	389.95
PROMETHEUS PROMODEM 1200	379.95
RIXON R212A 1200 BAUD	409.95
SMARTCAT 103/212	429.95
SMARTCAT 103	199.95
HAYES MICROMODEM Iie	234.95
SMARTMODEM 300 BAUD	274.95
SMARTMODEM 300 for //c	274.95
SMARTMODEM 1200 BAUD	484.95
SMARTMODEM 1200B - IBM	419.95
TRANSEND TRANSMODEM 1200	539.95
US ROBOTICS PASSWORD	319.95
ZOOM NETWORKER MODEM	104.95
ZOOM NETWORKER/MASTER	139.95

PRINTERS

AMDEK 5040 40CPS DAISY	1439.95
ANADEK DP-9501B	1099.95
ANADEK DP-9625B	1299.95
ANADEK DP-9620B	1179.95
ANADEK WP-6000	2299.95
ANADEK DP-6500R 500CPS	2529.95
ANADEK 9725R COLOR	1394.95
C.ITOH A10 DAISY WHEEL	509.95
C.ITOH 8510SP	489.95
C.ITOH 8600BP	799.95
C.ITOH 8510 SCP COLOR	569.95
COMREX CR-115 DAISY WHEEL	499.95
COMREX CR-III DAISY	819.95
DAISYWRITER 2000 48K	1129.95
DELTA-10	424.95
DELTA-15	624.95
EPSON FX-80 W/TRACTOR	519.95
EPSON FX-100 F/T	719.95
EPSON MX-100 F/T	449.95
EPSON RX-80	284.95
EPSON RX-80 F/T	339.95
EPSON RX-100	579.95
EPSON LQ-1500P COMPLETE	1189.95
GEMINI 10X	284.95
GEMINI 15X	409.95
GORILLA BANANNA	129.95
IDS PRISM 132	1659.95
JUKI 6100 PRINTER (P)	449.95
LEGEND 880 80CPS	244.95
MANNESMANN TALLY MT160L	639.95
MANNESMANN TALLY MT180L	879.95
MANNESMANN TALLY SPRTT	319.95
NEC 3550 SPINWRITER-IBM	1769.95
OKIDATA PACEMARK 2350P	2279.95
OKIDATA PACEMARK 2410P	2569.95
OKIDATA PACEMARK 2410S	2639.95
OKIDATA 82A	579.95
OKIDATA 83A	629.95
OKIDATA 84P	874.95
OKIDATA 84S	994.95
OKIDATA 92P	474.95
OKIDATA 93P	709.95
OKIDATA 93S	819.95
PANASONIC P1090	264.95
PANASONIC P1091	329.95
PRINTMASTER (DAISY)	1319.95
PROWRITER I (8510P)	344.95
PROWRITER II (1550P)	564.95
QUME SPRINT 11/40+	1439.95
SANYO PR5000 DAISY WHEEL	499.95
STAR POWER-TYPE DAISY	409.95
STARWRITER DAISY WHEEL	1039.95
TOSHIBA P-1351 P	1479.95
TRANSTAR 315 W/AP2 I/F	429.95
MICROBUFFER (EPSON RS232)	124.95
GRAFTTTI CARD (APPLE)	89.95
GRAPLER + (APPLE)	114.95
BUFFERED GRAPLER+	169.95
MICROBUFFER II+ 16K (AP2)	199.95
PRINTERFACE CARD (APPLE)	59.95
PKASO PRINTER I/F (APPLE)	139.95
WIZARD BPO 16K (APPLE)	139.95
WIZARD SOB 16K (APPLE)	199.95

OTHER PRINTERS AVAILABLE



YOU CAN BANK ON IT!

Our Rock Bottom prices will make a believer out of you!

CHECK US OUT!

Apple Country Ltd. is the leader in Rock Bottom computer prices. We intend to keep it that way!

We will try to meet or beat any advertised price!

CALL TODAY... WE CAN HELP!



CREDIT CARD ORDERS 1-800-222-2602

For order status, technical assistance and California calls (619) 765-0239 Apple Country, Ltd., P.O. Box 1099, 2602 Washington St., Julian, Calif. 92036 We accept AmEx. Prices reflect 2% discount for VISA/MC cash & check (2 weeks to clear). S&H in continental US 5%. (\$5 min) Monitors \$10 min. APO/FPO & others call. Calif add 6% tax. P.O. must include check. No COD. All orders prepaid. All items are new with Mfr's warranty. Prices, products & terms subject to change without notice. All sales final. Returns require RMA#. No returns on software. Volume discounts available.

Apple Country, Ltd. is a DISCOUNT MAIL ORDER HOUSE for the micro computer industry and is a California corporation not affiliated with Apple Computer Inc. Apple is a trademark of Apple Computer Inc.

Educational Software Sampler

Copyright 1984 by Joyce Conklin

After the first of these Software Sampler columns was published (in the April-May issue) I received a letter from a teacher in Wyoming, taking issue with my comments on the program "Exploring Your Brain". She says that her students really use and enjoy the program, that my problems with the screens going blank must have been because of a bad disk, and that I should have contacted the company before doing them the disservice of a poor review. Well, a difference of opinion is what makes horseracing, folks! I feel that my primary responsibility is to the readers of these reviews. If there is the possibility of a poor disk, or a poorly edited program, you should know about it so that you can exercise the old option of *caveat emptor* wisely.

That disclaimer out of the way, here is the latest crop of educational programs to cross my desk. The notation as to hardware compatibility should be noted, as some programs with the equivalent of the the BASIC GET statement seem not to work on the Apple //e or //c; this is probably due to the changes made when the auxiliary slot was designed for the //e, rerouting some of the signals which were originally in Slot 3.

Academic Skill Builders

(Apple II Plus, //e compatible)
Developmental Learning Materials
One DLM Park
Allen, TX 75002

DLM has issued a series of what some people call "edutainment" programs — arcade-type games which contain drill-and-practice on various skills. The Language Arts series consists of six different programs; *Word Man*, *Word Invasion*, *Spelling Wiz*, *Verb Viper*, *Word Radar*, and *Word*

Master. *Word Man* was the most enjoyable for me to play, as I felt it tested even my ability to decide *quickly* whether a particular combination made a real word or not. The object here is to press the space bar (or the button on a joystick or game paddle — it does not recognize the Open Apple button on the //e keyboard as being the equivalent of Paddle Button Zero) as the initial consonant passes the rest of the letters if that consonant makes a word. It does not recognize slang words (such as "lam".) In the other games there are creatures (*Word Invasion's* octopus, *Spelling Wiz's* wizard with a wand, *Verb Viper's* "Loch Ness Monster") or a weapon (*Word Radar's* radar beam and *Word Master's* "phasers") defending the home base against incoming "artillery." *Word Radar* is similar to the old game of Concentration; *Word Master* works on synonyms, homonyms, and/or antonyms.

The Math series also contains six different programs; *Alien Addition*, *Minus Mission*, *Meteor Multiplication*, *Demolition Division*, *Alligator Mix* (both addition and subtraction), and *Dragon Mix* (both multiplication and division.) These programs, more than the Language Arts series, rely on the "shoot-em-down" mode of play, as the aim is to reinforce rapid recognition of mathematical facts.

All programs in this series offer a series of options at the beginning of the "game"; selection of speed, difficulty of questions, keyboard vs. paddle/joystick operation, and also, for the Language Arts programs, toggling the sound, a feature greatly appreciated by harried classroom teachers driven slightly "nuts" by all the Apples sounding Control-G at the same time!

Academic Drill Builders

(Apple II Plus, //e-//c compatible)
Developmental Learning Materials

The latest modifications of the twelve programs listed above are six versions which will allow the parent or teacher to add their own content. *Master Match* is based on *Word Master*, *Wiz Works* on *Spelling Wiz*, and *Idea Invasion* on *Word Invasion*. In the math series, *Alien Action* matches *Alien Addition*, *Meteor Mission* matches *Meteor Multiplication*, and *Alligator Alley* has both addition and subtraction like *Alligator Mix*.

All the programs from DLM, whether pre-packaged or do-it-yourself, contain manuals with master copies of student record sheets, progress chart, strategies for improvement, worksheets, and a quick reference chart. These can be Xeroxed™ for distribution to the students in a class. The manuals for the Drill Builders contain not only step-by-step instructions for building your own lists of problems but hints about creating the games and suggestions for game lists. For example, in *Idea Invasion* the suggested games include not only the original six categories of parts of speech (nouns, verbs, pronouns, adjectives, adverbs and prep-

ositions) but ways to set up games concerning body parts, animals, food, household items and objects, family members, geography, history, and special terms (music, medicine, gardening, etc., etc.) Ideas are also given for the best ways to use these programs both in the school and the home setting. The original copies which I received did have limitations (*Master Match* would not allow you to have duplicate words, one as an answer and one as a question, or to have two different correct answers for the same question word, and some programs limited the length of the words which you could use) but I was told that these have been changed in later versions.

Story Tree

(Apple II Plus, //e//c compatible)

Scholastic Wizware

P.O. Box 2010

Englewood Cliffs, NJ 07632

Story Tree is designed to work with only one disk drive; if you try to put your story disk in Drive 2, you get an error message as only Drive 1 will spin. This is a particular advantage for entry-level systems and the home market, including the new Apple //c which has one built-in disk drive. After booting the master disk you are asked to insert the Story disk, where you can Read a Story, Work on a Story, Print a Story or Do Disk Work. This last option allows you to copy a story, erase it ("delete" in the old computereze!) change its name, or make a new Story disk ("initialize"). Use of the «ESC» key will return you to the menu(s) at almost anytime.

Of course, the aim of these stories (there are three already provided on the Story Disk — *The Magic Marigold Mine*, *Bigfoot*, and *Book Browser*) is to make choices at various places. In the hard-copy version of this activity ("Choose Your Own Adventure" series published by Bantam Books) when you make a choice you are directed to 'turn to page so-and-so'. With *Story Tree* the computer does the page turning for you. If the only way to use this program were to read already-composed stories, I would opt for the book version, but this program will let you write *your own* story.

It is not totally screen-menu driven, but a little time spent with the manual will help you to design a story with branches. If you choose N for "Is this a Super Story y/n", you can create a regular story using only CONTINUE and CHOICE connections, with a limit of two choices per page. Selecting Y will allow four choices per page and will allow a branch which has three directions, CONTINUE, CHOICE or CHANCE. There is a word processor which will let you edit your writing or revise your story. Stories can be printed out on your printer, two story pages (screens) to an 8-1/2 x 11 sheet of paper. The manual comes complete with a tutorial for writing your first story, by letting you write THE CHECKMATE MYSTERY.

Not only is this fun for kids of all ages, but it will encourage writing, planning (designing your story map) and logical thinking. On second thought, maybe a story would be more fun to read if it included some illogical thought!!

E-Z Learner

(Apple II Plus, //e//c compatible)

Silicon Valley Systems

1625 El Camino Real, #4

Belmont, CA 94002

The strength of this program is the ability to make your own "electronic flash cards" with your own particular list of items to learn. There are two modes; one presents you with the question and when you press the space bar, you will see the answer. You are then asked if you had the answer correct or wrong ('C' or 'W' key to be pressed) so you are on your honor. The other mode requires that you type in the answer; in this mode you must have the *exact* answer or it will be counted wrong so you would be wise to select this mode only when the answers are all single words and you are reasonably sure that you know how to spell them.

There are four demonstration files on the disk; Vocabulary, Grammar, Geometry, and American History. When in the "flash-card" mode, the program will allow you to review the questions which you missed. The questions can be presented in sequence or in random order. You cannot, however, quit one of the demonstration quizzes in the middle—you have to answer all the questions. You may also choose to have the answers presented and you will have to come up with the questions. Complete instructions are given on the disk, and you can elect to print these out on your printer. Even so, there were some things I was unable to do, and which were not addressed in the instructions, such as stop making up questions (it just wants another question, and will not let you escape if you have not entered any information) or operate the "bookmark" referred to on the package jacket, which *says* you can interrupt your study and then pick up where you left off.

This program would be excellent for what it is designed to do, were it not for these problems. Perhaps Silicon Valley Systems will put out an update on their documentation.

Rapid Reader

(Apple II Plus compatible)

Silicon Valley Systems

This program is designed to practice speed reading; you can choose words, word pairs, phrases, short sentences, or long sentences. You also have the choice of the speed test, or changing the words. The program is "core-load" so that once it is in the machine's memory, the disk can be removed. When choosing to modify the words, there are five word-banks; default (English), Spanish, user-modifiable (Spanish), and two user-modifiable (English). The sentences are formed by combining words from nine groups of words, e.g.

(1 AS) (2 A) (3 FAT) (4 CAT) (5 RAN)
(6 RAPIDLY) (7 UNDER THE TREE)
(8 WE) (9 DRANK TEA)

As you can see, there is a great possibility for nonsense sentences!! If you are trying to see how fast you read ordinary material, this might give you a falsely low reading, as trying to make sense of the random combinations tends to slow down your rate. It seems to be easier to read phrases than individual words, both being delivered to the screen at the same speed, because of the assistance of context. When you quit the program, there is a *brief* flash of a phrase, sometimes in English, sometimes in Spanish. Part of the fun is in trying to see what it says; the ones I deciphered included "Practice makes fast" (not "perfect" as you might first think), "We all start slowly" and "Espero que mejore proximo tiempo." (My Spanish-teacher friend says that correct grammar would have that last sentence read "Espero que

mejore la proxima vez.”)

P.S.A.T./S.A.T. Diagnostic

(Apple II Plus, //e//c compatible)
OWLCAT/Digital Research, Inc.
60 Garden Court
Pacific Grove, CA 93950

This program contains 60 questions in the S.A.T. format, including verbal (antonyms, analogies, sentence completions) and math (algebra, geometry, and quantitative comparisons.) When the disk is first booted, you are asked for your name; after that, you are greeted with your name. Once having taken the diagnostic test, you may not (contrary to the written documentation) select this choice again—it says “Sorry... You have already completed the diagnostic session.” You can still use the review session which will work on any of the six categories shown above. «ESC» transfers you to the main menu at any time. During the review session, you are offered a number of options; learning mode, times-arrow clock, sound, SAT scores, omit (allows you to skip a question), cheers (for the right answers), review and number of questions. If you select No for the learning mode (this option will not work on the //c but does on the II Plus), SAT scores, omit, and review will be Yes, the others will automatically be No, and the number of questions set at 10. If you select Yes for learning mode, you may select Y or N for each of the others, and a maximum of ten questions.

S.A.T. Preparatory Course OWLCAT/Digital Research

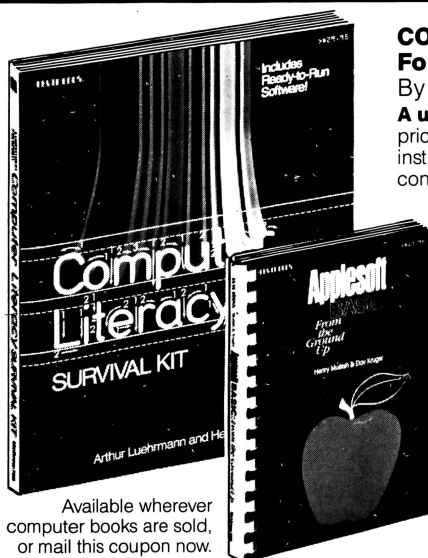
This set of lessons comes in two formats, a 15 hour or a 60 hour course. The 15-hour course has 4 disks with 29 lessons, covering antonyms, reading comprehension, analogies, sentence completions, algebra and geometry. Both of the math sections include work on quantitative comparisons. The 60-hour test also contains lessons on synonyms, theme words, electronic (on-disk) manuals covering supplementary information on analogies, fundamental algebra and geometry concepts and formulae, and the basic principles of geometry.

The information is controlled from a number of menus with information being readily understandable. Detailed manuals expand on the on-screen information. Studying options include lessons, buddy study, vocabulary builder, scorecard, and reading comprehension.

As the actual lesson and test presentation is very well done, it is most annoying to have the initial screen with information concerning copyright details have misspelled words (on an S.A.T. test??!) E.g., “This software has been provide (sic) pursuant to...” and “Transferring to main menuted...” with the “ted” left over from the previously displayed screen. If you can ignore these minor flaws, this is an excellent program. After your child has taken the test, you can learn from the lessons as well. It is instructive to discover what is expected of today’s high school student. 🍏

How to BYTE your Apple.

You’ve just plugged in your shiny new Apple. Now what do you do? More and more first-time users are turning to McGraw-Hill’s BYTE Books for expert answers to their basic questions. Here are two exciting new titles designed to get you started. Try them and discover for yourself why BYTE Books are the hands-on favorites with Apple users.



Available wherever
computer books are sold,
or mail this coupon now.

COMPUTER LITERACY SURVIVAL KIT For the Apple II, IIe, IIc Family of Computers

By Arthur Luehrmann & Herbert Peckham

A unique “hands-on” package—with ready-to-run software bound right in! Planned—and priced—for family use, this 7¼” x 9¼” package provides a basic introduction, step-by-step instructions for hands-on activities and programming projects, *plus* a bound-in, ready-to-run diskette containing all programs necessary to start and use the computer. *Illus.* Paperback, \$29.95

APPLESOFT BASIC: From the Ground Up

By Henry Mullish & Dov Kruger

For the absolute beginner—a first course in programming the BASIC language on the Apple II, Apple II+ and Apple IIe computers, with extensive treatment of Applesoft BASIC (Apple’s own version of the language). Lie-flat plastic comb binding. *Illus.* Paperback, \$10.95



McGRAW-HILL BOOK COMPANY, Dept. PL, 35th Floor
1221 Avenue of the Americas, New York, N.Y. 10020

Rev. 60

Please send me the following books:

Name _____

_____ copy(ies) of **Computer Literacy
Survival Kit** by Luehrmann & Peckham
@ \$29.95 each.

Address _____

_____ copy(ies) of **Applesoft BASIC** by
Mullish & Kruger @ \$10.95 each.

City _____

State _____ Zip _____

I enclose check or money order totaling \$ _____

Please add applicable taxes.

A08

Circle HelpCard No.010

The Dialectical Apple

A Series on the Modula-2 programming language.

By Rick Sutcliffe

About The Author

Rick Sutcliffe is Associate Professor of Mathematics and Computer Science at Trinity Western College (7600 Glover Road Langley B.C., Canada V3A 4R9 Phone 888-7511) He also teaches first year Physics and has taught all three subjects at the High School level. He is a regular columnist in Call A.P.P.L.E. (The Northern Spy) and is the author of numerous other articles in a variety of publications. A.P.P.L.E. also markets his "Ampermanager" program package.

He resides in Aldergrove B.C. with his wife Joyce and two children (Nathan and Joel) and can also be reached there at Box 1253, Aldergrove B.C. V0X 1A0

The Dialectical Apple is a series of articles on computer languages which will be appearing in the Orchard for a number of months.

Modula 2: General Considerations

For many years, Pascal has reigned as the language king supreme in academic institutions. It is easy to teach and to learn, and by its nature enforces many desirable programming habits upon its users. That it also has its shortcomings has been evident for some time, and

there have been various attempts to modify or enhance the language, but these have met with limited success, as they generally fail to address certain underlying structural problems.

Pascal was never intended to be much more than a teaching language; it certainly was not designed for large applications, and its students must therefore also learn other languages for many of these purposes.

Now Niklaus Wirth, the original author of Pascal, has produced the next generation of high level programming environment — one which has all the flexibility and power of Pascal as well as numerous extensions of both a higher and lower level nature. The changes are so substantial that, though it is an upward migration from Pascal, Modula-2 must be regarded as an entirely new programming environment.

Modula-2 is described in detail in Wirth's text published by Springer-Verlag in 1982 and corrected in 1983. This description, like his much earlier one of Pascal, is written in the usual style utilized by Mathematicians and Computer Scientists when talking to each other. That is, it is of little value as a teaching text, and I would normally assume there would be the usual two to five year wait for one which can be utilized by beginners, and another similar period for a truly excellent one. I have, however, been informed that Springer-Verlag is working on at least two new Modula texts, and the advantages of Modula over Pascal are so great that the textbook lead time may be considerably shorter.

In the interim, experienced Pascal programmers can quickly pick up enough of the language to carry on their work in the new environment without missing a beat. Subsequently, they can learn a whole new set of tricks as the more sophisticated aspects of the new language become clear.

The specific version described in this series of articles will be the Volition Systems implementation which runs under (and requires you to have) Apple Pascal. The standard UCSD operating environment can be chosen for editing and compiling programs, or a much enhanced (and highly recommended) "Advanced Systems Editor" can be added to the system. The ASE is also available separately for upgrading your current UCSD system. Used with a text formatting program it could also provide a very good word processor.

Here is what you actually get from Volition; other companies' implementations should be similar. The main document is a large looseleaf manual with five sections. The first is a 79-page introduction to Modula-2 for experienced Pascal programmers. It begins with a discussion of the Module concept and then systematically examines the major syntactical and semantical differences from Pascal. There are three Appendices providing lists of reserved words, standard identifiers, and the ASCII character set. The latter is defined to be the standard for Modula (not so in Pascal).

The next section (38 pages) describes the utility library which every Modula system has. Though not strictly a part of the language itself, this library is meant to provide an operating environment which remains the same in all systems and has been defined as such by Wirth in order to ensure complete portability of programs which confine themselves to the standard library interface.

Following this is the 16-page utility library description. The details of this will vary from computer to computer and from one version of Modula to another. For the collection of mathematical functions the syntax should be nearly universal. But beyond that point the nature of such a library will vary considerably with the implementation. Most publishers, this one included, will expand the utility library as time passes and user feedback demands.

After these library documents things get more specific. There is a 73-page manual for the p-system version of Modula. The idea is that the manual itself is in modular form, with increasing specificity as you move toward the back. For a CP/M installation, Volition would remove everything from this point on and replace it with other documents.

This style has some drawbacks, however. It is not until you get to this section that you discover that the product you have purchased contains some variations on standard Modula. There are not as many of these differences as there are between the standard and UCSD versions of Pascal, but they are significant. The modular form of the manual also means that no one list of reserved words or built-in identifiers is complete in itself; the whole treatment by the manual on any given feature must be gleaned from the various sections before that feature can be used.

This manual concludes with a specific implementation guide for the computer on which the system is being run. In my case this was the Apple, and each update or new release of the software brings with it some amendments to this system-specific information. There will be an initial period while some of these things firm up a little, but Volition seems ready to collect and distribute new support materials as they (or their users) prepare them.

If you do purchase their Advanced Systems Editor, you will have a complete system and will not require any files from your original Pascal disks; otherwise you must transfer to the Modula working disks a copy of SYSTEM.EDITOR. The ASE itself comes with a separate 140-page manual and is essentially similar to the original UCSD version, displaying the same initial prompt line. But, successive presses of the "?" key will result in five more lines of prompts being displayed, revealing that this is in fact a major upgrade.

The most significant differences, besides some editing enhancements, are the introduction of eight function keys (keyboard macros), much friendlier disk access (file menus are part of the prompting) and the ability to conduct "nested edits" without going back to the system prompt line. This is fairly important given the enormous size of the ASE. That size is also responsible for an operating change which is less than obvious to the actual user. Only a portion of the file being edited is kept in memory at a time — this is in a "window" or "page buffer". The rest resides on the disk, with the window being moved back and forth over the file contents as demanded by the position of the cursor.

This is essentially the same as the "virtual memory" schemes employed by some commercial DOS word processors. Naturally, in the event of a power failure the entire file is at risk, so there is automatic provision to ensure that the previously-saved version is left alone as a backup. The system does this by renaming the original file and then read-

ing its contents into a new file, which becomes the actual working version.

The beauty of the ASE is that UCSD Pascal programmers can use it exactly as they would the standard editor to begin with, and pick up the advanced features at leisure.

For my particular installation there are now four 5.25 inch floppies. The first contains the system files and a few configuration utilities; the second has the library, a number of sample programs and a library mapper (done by a user); the third has a p-shell, code to implement an SSD RAM disk and several other programs, and the fourth has the ASE and its appropriate MISCINFO files. These disks must be backed up, and then rearranged to make a useable system. In particular, an editor must be placed on one of the working disks, and most of the text files stored elsewhere to make room for those of the user. The file order recommended by Volition leaves almost no room on the boot disk; the user should probably put more on the "working" disk, and fewer on the one containing the Editor in order to make use of the SYSTEM.WRK option.

Finally, a copy of Wirth's book is included in the package. I sincerely hope that a genuine Modula textbook will also be added as soon as one becomes available (and assuming that it is not too badly flawed).

Evaluating the Documents

Overall, the documentation supplied is adequate, but unexciting — like Wirth's own book, it is not by any means intended for the uninitiated. In particular, reference material is scattered, and one will search in vain for clear, succinct descriptions of what the various modules can and cannot do, for they are lacking — the user must compile these by combing through the entire set of documents. The manuals are designed to describe the language to the professional who implements the system, most certainly not to a typical student or a casual user.

The price is too high (now \$295) for single-users, but a satisfactory choice of licensing arrangements is offered to educational purchasers, and they will be the principal consumers in any case. In general, a school purchases one copy and also a license to use it on a number of machines. The cost of the latter depends on how many units are in the installation and whether or not you actually distribute the software to students. If you do, each must pay a royalty fee, but the price per machine is less.

As I have indicated in other places, it is my belief that Modula will eventually replace not only Pascal, but also C and PL/I. (FORTRAN no longer counts.) Modula, Waterloo Structured BASIC, and LOGO will form the main language base from which most educational programming in the last half of this decade will be derived.

I say this despite the U.S. government's rush to ADA, a language which is similar in some of its structure, but which is so enormous that no one has yet written a compiler for the whole thing. Modula-2 is the low-cost alternative to ADA — definitely of the same generation and style — but more compact, accessible and actually available now to micro owners. There is little point for all but DOD contractors in using ADA when they can use Modula-2; the latter is the language of the future for most people. ADA will be used only by those

who have to and it will be treated like one of the typical hurdles faced with in dealing with government — it's there, but you don't have to like it.

What are we really here for?

However, the chief purpose of this particular series is less to offer opinions of the utility of the language or the readability of its descriptions than to offer an introduction to its use, first by comparison to and extension of Pascal, and then by describing what can be done with its unique features — some of which are found in few other languages, and all of which are contained in none.

Improving on Pascal

For this month, and before we do go on to examine the language in detail, let me point out some of the more serious flaws of Pascal which are addressed admirably by Wirth in Modula-2.

There has been a need for some time to separate the visibility of variables from their existence. In Pascal, the memory assigned to a variable upon entering a procedure or function is reclaimed by the system upon exit. Only those values returned in the function name or in variable parameters exist at all in the surrounding program. This is good, for too many global variables will destroy any pretense of structure in a program, but it does have a serious drawback.

If the procedure is later re-entered, the assignment must be done again, for the previous contents of the variable are lost. The only ones which can maintain their value across procedure calls are those local to the outer block (global). What is needed is another kind of wall around objects — one which affects their visibility to the outside world, but not their existence.

Wirth's contribution is the Module, within which objects continue to exist across repeated calls, but outside of which they can be seen only if they are made visible by EXPORTing them. We shall describe the details in subsequent months, but can state here that the net result is a better facility for tightly structured programs, a more readable source code, and a more controlled programming environment.

Another severe limitation of Pascal is its inflexibility when passing parameters to procedures. If a procedure is called to manipulate an array which sometimes has three elements and other times has a hundred, you must declare the array in the formal parameter list to handle the maximum size that will ever be passed to it as an actual parameter; much memory can be wasted on some of the calls. What is worse, the one passed must be padded or otherwise made TYPE compatible, or its elements cannot be assigned at all.

Modula, on the other hand, has a means by which an array of any size can be passed to a procedure without wasting any memory — only the number of locations necessary to make the assignment will be allocated. Furthermore, if the

formal parameter is an ARRAY OF WORD, it is TYPE compatible with any array.

A third flaw in Pascal (which so surprised me the first time I saw it that I was sure it must be a bug) is the necessity to enumerate every choice in a CASE statement. This often forces one to use a complex series of IF..THEN..ELSE statements instead of something like:

CASE TAG OF INTEGER

1..10 : Statement sequence1

11..20 : Statement sequence 2

which is much more natural, and is allowed in Modula though with a slight syntactical change, which I shall come to in due course.

Another restriction which has been removed is that on the use of constants in expressions. A second (except in the one-pass Volition compiler) is the need to declare objects before using them. Yet another is the need to link separately compiled UNITS into a library; any module becomes part of the available library merely by compiling it — though it can be placed in MODULA.LIBRARY for added speed.

Another subtle (but rather important) change forces recognition of TRUE or FALSE values of BOOLEAN expressions as soon as this can be determined, rather than requiring the whole expression to be examined, as required in Pascal.

The final major improvement is the access to low level objects. Although this is system dependent, the Modula programmer can examine and alter memory directly from a program without having to resort to the Pascal trickery of multi-use variables.

Some organizational changes are present as well, and I will discuss subprograms, co-processes, and other methods in the subsequent articles of this series.

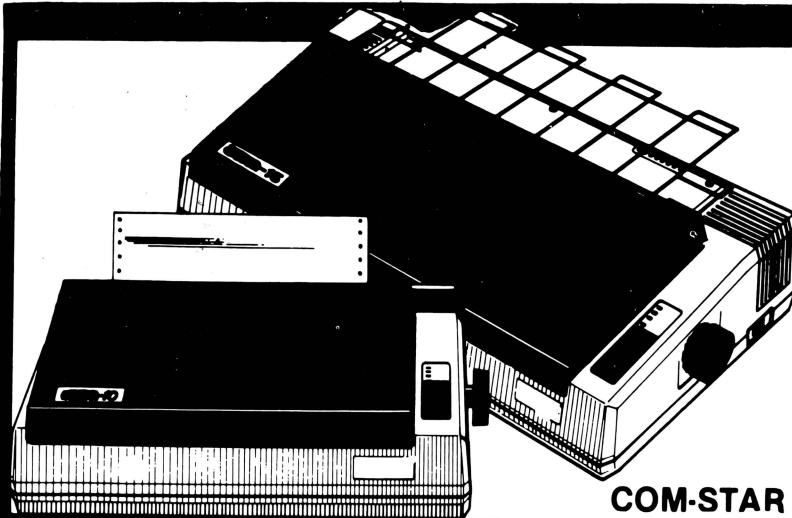
There is one thing lost which Pascal programmers will find quite unsettling. There are no type-insensitive multi-argument I/O statements like the Read(ln) and Write(ln) of Pascal. Instead, each I/O statement is type-specific and takes only one object parameter. Thus we have ReadReal, WriteCard, WriteOct, etc. — all of which must be IMPORTed from the separate module (not part of the language as such) where they are defined. I/O is to some extent machine-specific, and these procedures are based on implementation dependent modules; thus the necessity to separate them from the language itself. Single-object parameter lists will enforce both type-checking and a greater structure in the writing of I/O statements, but will take some time to become used to if you already have facility in Pascal.

The Bottom Line

In summary, Modula is at once more highly structured and more flexible than Pascal. For all the details, visit this space again; we'll be camped on Modula-2 for several months to come.

Volition Systems sells Modula-2 for the Apple. Their address is P.O.Box 1236, Del Mar, CA 92014 USA

FANTASTIC COMPUTER PRINTER SALE!!!



COM-STAR T/F

Tractor
Friction
Printer

only \$ **169****

- Lowest Priced, Best Quality, Tractor-Friction Printers in the U.S.A.
- Fast 80-120-160 Characters Per Second • 40, 46, 66, 80, 96, 132 Characters Per Line Spacing
- Word Processing • Print Labels, Letters, Graphs and Tables • List Your Programs
- Print Out Data from Modem Services • "The Most Important Accessory for Your Computer"

** DELUXE COMSTAR T/F 80 CPS Printer — \$169.00

This COMSTAR T/F (Tractor Friction) PRINTER is exceptionally versatile. It prints 8½" x 11" standard size single sheet stationary or continuous feed computer paper. Bi-directional, impact dot matrix, 80 CPS, 224 characters. (Centronics Parallel Interface).

Premium Quality 120-140 CPS 10" COM-STAR PLUS+ Printer \$249.00

The COM-STAR PLUS+ gives you all the features of the COMSTAR T/F PRINTER plus a 10" carriage, 120-140 CPS, 9 x 9 dot matrix with double strike capability for 18 x 18 dot matrix (near letter quality), high resolution bit image (120 x 144 dot matrix), underlining, back spacing, left and right margin settings, true lower decenders with super and subscripts, prints standard, italic, block graphics and special characters. It gives you print quality and features found on printers costing twice as much!! (Centronics Parallel Interface) (Better than Epson FX80). List \$499.00 **SALE \$249.00**

Premium Quality 120-140 CPS 15½" COM-STAR PLUS+ Business Printer \$349.00

Has all the features of the 10" COM-STAR PLUS+ PRINTER plus 15½" carriage and more powerful electronics components to handle large ledger business forms! (Better than Epson FX 100). List \$599 **SALE \$349.00**

Superior Quality 140-160 CPS 10" COM-STAR PLUS+ IBM IBM Pers/Bus Printer \$369.00

Has all the features of the 10" COM-STAR PLUS+ PRINTER! It is especially designed for all IBM personal computers! 140-160 CPS HIGH SPEED PRINTING 100% duty cycle, 2K buffer, diverse character fonts, special symbols and true decenders, vertical and horizontal tabs. A RED HOT IBM personal business printer at an unbelievable low price of \$369.00 (centronics parallel interface) List \$699 **SALE \$369.00**

Superior Quality 160-180 CPS 10" COM-STAR PLUS+ HS Business Printer \$369.00

The Super Com-Star+ High Speed Business Printer 160-180 CPS has a 10" carriage with all the Com-Star+ features built in! The 15½" High Speed Business Printer is especially designed with more powerful electronics to handle larger ledger business forms! Exclusive bottom feed! (Centronics parallel interface) 15½" printer is also compatible with IBM Personal/Business Computers! 15½" Printer List \$799.00 **SALE \$469.00**

Olympia

Executive Letter Quality DAISY WHEEL PRINTER \$379.00

This is the worlds finest daisy wheel printer **Fantastic Letter Quality**, up to 20 CPS bidirectional, will handle 14.4" forms width! Has a 256 character print buffer, special print enhancements, built in tractor-feed (Centronics Parallel and RS232C Interface) List \$699 **SALE \$379.**

• 15 Day Free Trial - 1 Year Immediate Replacement Warranty

PARALLEL INTERFACES

For VIC-20 and COM-64 — \$49.00 For Apple computers — \$79.00 Atari 850 Interface — \$79.00 For ALL IBM Computers — \$89.00

Add \$14.50 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$29.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery. 2 to 7 days for phone orders. 1 day express mail! VISA—MASTER CARD—We Ship C.O.D. to U.S. Addresses Only

PROTECTO ENTERPRIZES (WE LOVE OUR CUSTOMERS)

BOX 550, BARRINGTON, ILLINOIS 60010
Phone 312/382-5244 to order

COM-STAR PLUS+
Print Example:

**ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890**

FLOPPY DISKS SALE *98¢ ea.

Economy Model or Cadillac Quality

LORAN CERTIFIED PERSONAL
COMPUTER DISK

We have the lowest prices! LORAN CERTIFIED PERSONAL
COMPUTER DISK

*ECONOMY DISKS

Good quality 5 1/4" single sided single density with hub rings.

Bulk Pac	100 Qty.	98¢ ea.	Total Price	\$98.00
	10 Qty.	\$1.20 ea.	Total Price	12.00

CADILLAC QUALITY (double density)

- Each disk certified
- Free replacement lifetime warranty
- Automatic dust remover

For those who want cadillac quality we have the Loran Floppy Disk. Used by professionals because they can rely on Loran Disks to store important data and programs without fear of loss! Each Loran disk is 100% certified (an exclusive process) plus each disk carries an exclusive FREE REPLACEMENT LIFETIME WARRANTY. With Loran disks you can have the peace of mind without the frustration of program loss after hours spent in program development.

100% CERTIFICATION TEST

Some floppy disk manufacturers only sample test on a batch basis the disks they sell, and then claim they are certified. Each Loran disk is individually checked so you will never experience data or program loss during your lifetime!

FREE REPLACEMENT LIFETIME WARRANTY

We are so sure of Loran Disks that we give you a free replacement warranty against failure to perform due to faulty materials or workmanship for as long as you own your Loran disk.

AUTOMATIC DUST REMOVER

Just like a record needle, disk drive heads must travel hundreds of miles over disk surfaces. Unlike other floppy disks the Loran smooth surface finish saves disk drive head wear during the life of the disk. (A rough surface will grind your disk drive head like sandpaper). The lint free automatic CLEANING LINER makes sure the disk-killers (dust & dirt) are being constantly cleaned while the disk is being operated. PLUS the Loran Disk has the highest probability rate of any other disk in the industry for storing and retaining data without loss for the life of the disk.

Loran is definitely the Cadillac disk in the world

Just to prove it even further, we are offering these super LOW INTRODUCTORY PRICES

List \$4.99 ea. **INTRODUCTORY SALE PRICE \$2.99 ea. (Box of 10 only) Total price \$29.90**

\$3.33 ea. (3 quantity) Total price \$9.99

All LORAN disks come with hub rings and sleeves in an attractive package.

DISK DRIVE CLEANER \$19.95

Everyone needs a disk drive doctor

(Coupon Price \$16.95)

FACTS

- 60% of all drive downtime is directly related to poorly maintained drives.
- Drives should be cleaned each week regardless of use.
- Drives are sensitive to smoke, dust and all micro particles.
- Systematic operator performed maintenance is the best way of ensuring error free use of your computer system.

The Cheetah disk drive cleaner can be used with single or double sided 5 1/4" disk drives. The Cheetah is an easy to use fast method of maintaining efficient floppy diskette drive operation.

The Cheetah cleaner comes with 2 disks and is packed in a protective plastic folder to prevent contamination.

List \$29.95 / Sale \$19.95 * **Coupon \$16.95**

Add \$3.00 for shipping, handling and insurance. Illinois residents please add 6% tax. Add \$6.00 for CANADA, PUERTO RICO, HAWAII, ALASKA, APO-FPO orders. Canadian orders must be in U.S. dollars. WE DO NOT EXPORT TO OTHER COUNTRIES.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail!

VISA — MASTER CARD — C.O.D.

No C.O.D. to Canada, APO-FPO.

PROTECTO

ENTERPRIZES WE LOVE OUR CUSTOMERS!

BOX 550, BARRINGTON, ILLINOIS 60010

Phone 312/382-5244 to order

Apple //c

Review of New Products

by Gene Wilson

The following products are among those released for use on the Apple //c personal computer. These products have generally been upgraded to use some (or all) of the //c's superior features: the additional memory (up to 128k available), the mouse (firmware built into the unit), upper and lower case displays of 40-or 80-columns, and ProDOS.

- An **RGB color Interface**, by Video-7 Inc., allows the //c to use an RGB monitor for either color applications, or as a monochrome 40- or 80-column monitor (In your choice of colors: amber, white, green, or blue). A demonstration diskette includes a set of double density drivers which allow easy access from Applesoft to the //c's double density video modes.
- **Simply Perfect**, from LJK, Inc., is an integrated software program containing a word processor and spelling checker, a calculating data base, and a report

generator with up to sixteen formula fields. \$189.95. For further information, contact Ken Berry, President, at (314) 962-1855.

- **Superbase**, by Precision Software (USA), Inc., is a database management and information retrieval system. It uses B+ direct tree indexing. The program is menu-driven; a user-programmable interface can be used to create custom applications packages. The first applications packages, **Homebase 1, 2, and 3** offer home applications and a programmer's guide to programming under Superbase.
- **Spell It**, by Davidson & Associates for ages 10 to adult, contains four separate exercises, each building up to the next. One thousand of the most commonly misspelled words are split into groups of twenty. The program also has an editor, allowing users to add their own word lists and customize the exercises. \$49.95. Other products upgraded for the //c include **Word Attack!**, **Math Blaster!**, **Speed Reader II**, and **Classmate**.
- The **QC10 hard disk**, by Quark Incorporated, offers ten megabytes of disk capacity. It will fit directly to the floppy disk drive port on the //c. Versions will be also available for use on the II Plus, //e and Apple /// computers.
- Quark's **Catalyst** will run on the //c when using the QC10 hard disk. \$149.00.
- A //c version of Quark's **Word Juggler** will include the **Lexicheck** spelling checker and the **Terminus** communications program. This version will include replacement keycaps that label the principal editing and formatting functions. The program will also take advantage of the AppleMouse II. Word Juggler //c will retail for \$189.00; Terminus //c for another \$89.00.
- **Multiplan**, version 1.07, by Microsoft, includes two templates, or pre-designed worksheets, that introduce users to loan analysis and home budgeting. Other features include on-line help, the ability to link worksheets together and the ability to sort columns of data. \$195.00.
- **The Write Choice**, written by Roger Wagner Publishing, Inc. for Apple //e and //c computers, combines a word processor, typing instruction software, a grammar style guide, and an extensive typing style guide. Twenty-three lessons are devoted to teaching the DVORAK keyboard; twenty-four to the standard QWERTY keyboard. \$44.95.
- BPI offers the following packages for the //c: **General Accounting**, **Accounts Receivable**, **Accounts Payable**, **Payroll and Inventory Control**, each for \$425.00; and **Budget and Analysis**, for \$195.00. Later this summer, BPI's Personal Series — **Personal Investing**, **Personal Accounting** and **Speed Reading** — will be made available.
- Over forty educational software programs, from Sunburst Communications, are compatible with the new //c. They include: **The Factory**, **The Pond**, **Explorer**, **Metros**, **Memory: The First Step in Problem Solving**, **Teasers by Tobbs**, **Code Quest**, **Challenge Math**, **Odd One Out**, **The Incredible Laboratory**, and **Getting Ready to Read and Add**. These programs,

designed for pre-K through high school students, specialize in developing problem-solving techniques and thinking skills.

- An enhanced version of **Mastertype**, by Scarborough Systems, includes high resolution graphics, and scoring retention. In addition to the 18 lessons on the standard QWERTY keyboard, the program includes five lessons on the Dvorak keyboard. \$49.95.
- **Stickybear Shapes**, by Weekly Reader Family Software, is a colorful introduction to shapes for children 3-to-6 years old. The program accepts input from the AppleMouse //c, virtually eliminating the need for complicated keyboard commands. The full line of Weekly Reader Family Software runs on the //c.
- **Dollars and Sense**, a personal financial management package from Monogram, has been upgraded to use the mouse. Very detailed help screens are incorporated. The //c

version allows up to 120 recordkeeping categories of five different types: assets, liabilities, expenses, income and checking. \$119.95.

- **Rocky's Boots**, from the Learning Company, allows use of the AppleMouse //c in addition to the keyboard or joystick. With forty different logic games, Rocky's Boots is an electronic erector set that teaches the basics of building computers in a playful interactive environment. It is targeted for players from nine years to adult.
- Arrays, Inc./Continental Software has upgraded their packages to take advantage of the advanced features of the //c: expanded memory, eighty-column screen, upper and lower case, ProDOS and mouse environment. These programs include: **The Home Accountant, The Home Cataloger, The Tax Advantage, F.C.M., the CPA Series (General Ledger, Accounts Payable, Accounts Receivable) and Property Management.**

//c Vendor's List:

These are some of the companies that have gotten their new products out for the Apple //c computer:

Arrays, Inc./ Continental Software Linda Feldman	11223 South Hindry Ave. Marketing Manager	Los Angeles, CA 90045 (800) 421-3931 (213) 410-3977
BPI Systems, Inc. Thomas O. Meadows	3423 Guadalupe	Austin, TX 78705 (512) 454-2801
Davidson & Associates Dr. Jan Davidson	6069 Groveoak Place #12	Rancho Palos Verdes, CA 90274 (213) 373-9473
The Learning Company Shivonne Byrne	545 Middlefield Rd. Suite 170	Menlo Park, CA 94025 (415) 328-5410
LJK, Inc. Mr. Ken Barry	7852 Big Bend Blvd. President	St. Louis, MO 63119 (314) 962-1855
Microsoft Corporation Marty Taucher	10700 Northup Way	Bellevue, WA 98004 (206) 828-8080
Monogram Derek McLeish	8295 La Cienega Blvd. VP of Sales and Mktg.	Inglewood, CA 90301 (213) 215-0529
Precision Software (USA), Inc.	Suite 1100 820 Second Avenue	New York, NY 10017 (212) 490-1825
Quark Incorporated Jennifer Gardner	2525 West Evans Suite 220	Denver, CO 80219 (303) 934-2211
Scarborough Systems, Inc. Sandy Bain	25 North Broadway	Tarrytown, NY 10591 (914) 332-4545
Sunburst Communications, Inc. Susan D. Markey	Public Relations Dir.	Pleasantville, NY 10570 (800) 431-1934
Video-7 Inc.	Suite 1 12340 Saratoga Road	Saratoga, CA 95070 (408) 725-1433
Roger Wagner Publishing, Inc.	10761 Woodside Avenue Suite "E"	Santee, CA 92071 (619) 562-3221
Weekly Reader Family Software Xerox Education Publ. Fritz Luecke Judy Carlson	245 Long Hill Road	Middletown, CT 06457 (203) 347-7251

A Word Processing Database – Part II

by Richard Loggins

Last month we established the basic terminology and essential components of a WPL program. This month, we'll attempt to present as much of the database as possible, with the hopes of completing it ahead of schedule. This will enable us to discuss some wonderful changes in store for anyone interested in AppleWriter and WPL.

With this in mind, instead of providing a line by line description of each program, we'll move more to explaining "routines", or sections of the program. We will, however, fully examine any line containing a new command or a line that uses a command differently. Again, if you run into any problems, drop me a line c/o *Apple Orchard*.

Last month we presented the first three routines (Figure 1) of our database program, which included two sub-routines. The first routine (START) turned off the video display, erased memory, and jumped to the routine named MENU.

LINE is a subroutine that prints a series of dashes, either 40 or 80 depending upon your monitor.

SELECT is another subroutine that will be used to prompt and obtain the user's selection.

WPL PROGRAM: MB (PART I)

```
START PND
      NY
      PGO MENU
LINE PPR-----
      PRT
SELECT PSR LINE
      PPR
      PIN
      Select your option by letter: =$A
      PRT
```

(Figure 1)

NOTE: Please replace Main Menu Program from July 1984 with the above program.

Moving right along (Figure 2), the next subroutine is TITLE, and will place the title of our program on the video monitor. Notice the first line contains "option" immediately after the PPR command. When you see "option" in the program listing, it means you must insert the proper option for your computer.

This particular option uses a special control character to clear the video monitor, similar to the "HOME" command in Applesoft or Business Basic. It uses the CONTROL-V command to embed a control character in the text.

If you are using an Apple II or //e, you should press CONTROL-V, CONTROL-L, CONTROL-V. This will embed the CONTROL-L within your text, which will cause the video monitor to be cleared. You should see the letter "L" displayed in inverse on your monitor.

If you are using an Apple ///, press CONTROL-V, CONTROL-\, CONTROL-V. This symbol is the "back" or "reverse" slash mark, and should be displayed in inverse.

The routine (MENU) initiates a lot of action. First it calls the subroutine named TITLE, which clears the monitor and prints the title of the program. TITLE then calls the subroutine LIN, which will put a series of dashes on the monitor.

After the six selections have been placed on the monitor, the subroutine named SELECT is called. SELECT will prompt the user for his choice, and place the number in the variable \$A. Be sure to notice there is no space between the equal sign and the "\$" sign.

The variable \$A is then subjected to a series of comparisons using the PCS command. Please note there are no intervening spaces in the comparisons. If one of the comparisons is valid, the program will branch to the proper routine.

For example, if \$A contains a "1", the routine named DETNEW will be executed. If \$A contains a "2", the WPL program named DBDM will be loaded and executed. If no valid comparisons are found, the program simply jumps back to the routine named MENU.

WPL PROGRAM: MB (PART II)

```
TITLE PPR option **** Minibase **** Version 1.0
      PPR (©) 1984 - Richard Loggins
      PSR LIN
      PPR
      PRT
MENU PSR TITLE
      PPR      1 - Create New Files.
      PPR      2 - Data File Maintenance.
      PPR      3 - Blank Forms Maintenance.
      PPR      4 - Printing and Printing Options.
```



```

PPR      5 - Minibase Utility Functions.
PPR      6 - Quit Using Microbase.
PSR SELECT
PCS/$A/1/
PGO DETNEW
PCS/$A/2/
PDO DBDM
PCS/$A/3/
PDO DBFM
PCS/$A/4/
PDO DBPO
PCS/$A/5/
PDO DBUF
PCS/$A/6/
PGO END
PGO MENU

```

(Figure 2)

The next portion of the program (Figure 3) is similar to the routine named MENU. The DETNEW routine is another menu that is used to determine which type of new file is to be created.

Limited to three selections, it allows the creation of either a 'data' file, a 'blank forms' library file, or returning to the main menu.

The routine named END, quite naturally, will end the program and return you to the text editor of AppleWriter.

Just a friendly reminder and a few words of caution. Parts one, two, and three should be entered as one program, and saved on your disk with the name of "MB."

If you wish to designate a particular drive, which is strongly suggested, include the drive designation throughout the program. If your Minibase disk will always be in drive number one, you must change all occurrences of PDO filename . For example, the command PDO DBDM would become PDO DBDM,D1 (Apple //) or PDO .D1/DBDM (Apple ///).

Instead of inserting four or five spaces before any of the commands (such as PPR), insert only one space. This will ensure your program will not exceed 2,048 characters in length.

WPL PROGRAM: MB (PART III)

```

DETNEW PSR TITLE
PPR
PPR      1 - Data File
PPR      2 - Blank Forms Library
PPR      3 - Return to Main Menu
PPR
PSR SELECT
PCS/$A/1/
PDO DBC1
PCS/$A/2/
PDO DBC2
PCS/$A/3/
PGO MENU
PGO DETNEW
END NY
PQT

```

(Figure 3)

DATA FILE CREATION

The program named DBC1 (Figure 4) will allow you to create a datafile for use in storing your data (see the first article for a discussion on data, records, etc.).

The first three routines in this program are identical to the first three routines in the MB program. If you want to save yourself some typing time, save these routines as a separate text file. You can then load them in to the text editor whenever you need to.

The subroutine named BLNK will print a predetermined number of blank lines. The numeric variable Z is set to the desired value prior to calling this routine.

The routine named MENU is not actually a menu. Its function is to ask for the name of the data file you wish to create, and place your response in the variable \$C.

It then compares \$C to a null string or "nothing". Thus, if the RETURN key was pressed, and no entry was made, it will terminate this program and execute the program named MB, which is the main menu.

Assuming everything is hunky-dory, the sub-routine named SET1 is called. This routine establishes three things: (1) The name of the file with the ".DAT" suffix, (2) the number of records currently in the file, and (3) the number of fields in the file.

We'll go through this routine line by line. If it isn't correct, the entire program may not function correctly. The first line clears memory (NY), and then moves the cursor to the beginning of the file (B).

Next, the FIND command is used with special delimiters. This command says to (1) find "nothing" (F**), (2) replace it with three exclamation points, (3) the name of the file (\$C), (4) add the suffix for data files (.DAT), (5) add three more exclamation points, and (6) insert a carriage return — symbolized by the comma.

As you know, when the FIND command is used, if the item to be located is found, it pauses and asks if the replacement should occur.

The next line, which consists of Y?, will provide the positive confirmation (the letter Y), and then immediately terminate the search (the question mark).

If this isn't clear, use the FIND command from the text editor and enter exactly what is contained in this line.

The next line (F**††††††††††,*,*) is similar to the command that inserted the name of the data file. Here, we establish the current number of records in the file.

NOTE: Replace all dagger characters (†) with tilde characters (~).

The next line (F**@@@0@@@,*) will insert the current number of fields in each record.

It may be worth your time to enter this entire routine using the text editor in the immediate mode. Execute the commands one at the time, and note the position of the cursor after each command.

After this routine has completed its function, the numeric variable X is set to the value of one. The variable X will be used to keep track of the number of fields, and will aid in defining the labels for each field.

ASSIGNING LABELS

The routine named GETLBL first clears the monitor and places the title on the monitor by calling the subroutine named TITLE. It then prints an informative message that will serve as a reminder how to end the label definition routine.

For each field, the field number will be displayed, and you will be requested to enter the label you wish to use for that field. During this routine (and throughout WPL), the "(X)" will be replaced by the actual value of X.

The label is placed in the variable \$D, and is then subjected to a comparison. If \$D contains a null string ("nothing"), the GETLBL routine will end.

Otherwise, the cursor is placed at the end of the text, its direction is set forward (">"), and the FIND command is used to insert the field number and the label into the file. The numeric variable X is incremented, and the routine is started again.

WPL PROGRAM: DBC1 (PART I)

START PND

NY

PGO MENU

LN

PPR

PRT

SELECT PSR LN

PPR

PIN

PRT

Select your option by letter: =\$A

BLNK PPR

PSZ -1

PGO BLNK

PRT

TITLE PPR option **** Minibase **** Version 1.0

PPR (C) 1984 - Richard Loggins

PSR LN

PRT

MENU PSR TITLE

PPR

PPR

PIN

Name of File: =\$C

PCS/\$C//

PDO MB

PPR

PSR SET1

PSX 1

GETLBL PSR TITLE

PPR

PPR

NOTE: Press RETURN without making an entry to end label definitions.

PPR

PIN

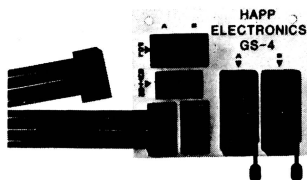
Name of label for field (X): =\$D

PCS/\$D//

PGO END

E

GAME SOCKET EXTENDER #GS-4



- * Multi-pole switch allows individual or simultaneous use of game sockets:
 - paddles or joystick for 1-player
 - 2 standard joysticks for 2-players
 - 2 standard paddle sets for 4-players
- * 2 "Zero-insertion force" sockets.
- * Extra socket can be switched to use game "fire buttons" SW(0) & SW(1) or SW(1) & SW(2)
- * Solid-state protection for shift-key modification users.
- * Apple IIe compatible.
- * No jumpers - easy to install and use.

#GS-4 — \$34.95

HAPP ELECTRONICS, INC.

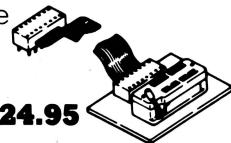
Circle HelpCard No.012

ORDERS UNDER \$20.00, ADD \$1.50 FOR SHIPPING

Wisconsin Residents add 5% Sales Tax. Apple® is a registered trademark of Apple Computer, Inc.

GAME SOCKET EXTENDER #GS-1

- * Changing between paddles, joysticks and other I/O devices become a snap.
- * Single "Zero-insertion force" socket mounts on the outside of your Apple
- * 24" ribbon cable.

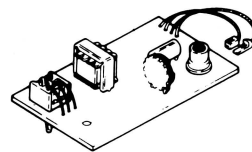


#GS-1 — \$18.95 #GS-2 — \$24.95

#GS-2 same as #GS-1 but with an extra female socket on male plug end (inside Apple's case).

HI-FI ADAPTOR FOR THE APPLE®

- * Connects your Apple to your stereo or hi-fi.
 - * Game sounds and music become exciting.
 - * Easily mounts inside Apple's case — all plug-in connections
 - * Standard output jack.
 - * Adjustable output level.
 - * Apple IIe compatible.
- "you will be astonished at the result"* CREATIVE COMPUTING - AUG '82



HI-FI ADAPTOR — \$25.00

**4640 ISLAND VIEW
OSHKOSH, WI 54901
414 - 231-5128**


```

D
F**t@t(X)t@t$D,*
Y?
PSX +1
PGO GETLBL
SET1 NY
B
F*!!!$C.DAT!!!,*
Y?
F**ttt0ttt,*
Y?
F**0000000,*
Y?
PRT

```

(Figure 4)

COMPLETING CREATION

After the last label has been defined, control is passed to the routine named END (Figure 5). This routine informs you the file is being prepared and saved.

The cursor is moved to the beginning of the file, the numeric variable X is decremented to equal the actual number of fields, and the FIND command is used to insert the appropriate number of fields into the text for later use,

A “less than” symbol (“<”) is then placed at the very end of the text to serve as an end-of-file marker (called an “eof”), again for later use by other routines.

Finally, the file is saved on disk, and you are returned to the main menu of the program.

WPL PROGRAM: DBC1 (PART II)

```

END PSR TITLE
PPR
PPR   Preparing and saving the file named: $C
B
PSX-1
F*0000000*000(X)000*
Y?
E
D
F**<,*
Y?
S $C
PDO MB

```

(Figure 5)

Let's pause for a moment, and examine what the data file will contain after it has been created. This will provide you with a better understanding of what the routines are doing — particularly the FIND command.

You can create your own data file and examine its contents by loading it into the text editor as you would any normal text file. Figure 6 shows what you'll see, along with a brief explanation of each item.

!!!MYFILE.DAT!!! = MYFILE is the name of the file.
0 = The current number of records in the file.
0003000 = The current number of fields in the file.
@1@Name = Field #1 and associated label “Name”
@2@Address = Field #2 and label “Address”

@3@City = Field #3 and label “City”
< = EOF marker

(Figure 6)

Now that we have the data file created, we can move on to the program that will allow access to all of the functions on the data file.

DATA FILE MAINTENANCE

Figure 7 presents the first part of the data maintenance program. This program allows entry of new records, loading and saving of data files, and access to the programs for viewing, editing, and deleting records.

With the exception of the subroutines named GLB and FND, it offers nothing new or unique in the way of programming or commands. However, due to its size (as you will see when you enter it) many of its labels have been shortened. Make sure you precede the commands with only one space, or you'll exceed the 2,048 character limit.

We'll discuss the GLB and FND routines a bit later on, as their functions and purpose won't make any sense if they are discussed now.

WPL PROGRAM: DBDM (PART I)

```

START PND
PGO M1
LN PPR -----
PRT
SEL PSR LN
PPR
PIN   Select your option by number: =$A
PRT
TITLE PPR option **** Minibase **** Version 1.0
PPR (C) 1984 - Richard Loggins
PSR LN
PRT
GLB B
F*t@t(Z)t@t*t@t(Z)t@t*
?
PGO FND
PAS1=$A
PRT
FND B
PLS#*t@t(Z)t@t*,*N=$D
PAS2=$A
PRT
M1 PSR TITLE
PPR
PPR   1 - Add a record to the file.
PPR   2 - Delete a record from the file.
PPR   3 - Load a new Data File.
PPR   4 - Save current Data File.
PPR   5 - View or Edit a record.
PPR   6 - Quit Data File, return to Main Menu.
PSR SEL
PCS/$A/1/
PGO A1
PCS/$A/2/
PDO DBDM.2
PCS/$A/3/
PGO LOAD
PCS/$A/4/
PGO SAVE

```

```

PCS/$A/5/
PDO DBDM.1
PCS/$A/6/
PDO MB
PGO M1

```

(Figure 7)

LOADING AND SAVING

Figure 8 provides the routines that are used to load and save the data file. While generally straightforward in their operation, a concept is used that may be of significance.

When the data maintenance program is entered, the text editor is not erased until a file is actually loaded. The reason for this is that once a data file has been loaded, it remains in memory until either a new file is loaded or until we return to the main menu (program MB).

This allows a file to be loaded, then subsequently viewed, changed, etc. by other programs associated with data file maintenance, without loading the file each time. The changes to the file do not become permanent until the file is again saved (selection 4).

The price one must pay for this benefit, is one must remember to save the file if you wish to make the changes permanent.

The routine named LOAD requests the file to be loaded, including the drive number if you wish. This is placed in the variable \$C, and tested for a valid entry.

If the entry is valid, the file is loaded, and you are returned to the data maintenance menu.

The routine named SAVE simply saves the file, with any new changes, back onto the disk.

WPL PROGRAM: DBDM (PART II)

```

LOAD PSR TITLE
PPR
PIN    Name of file to load: =$C
PCS/$C//
PGO M1
NY
PPR    Loading. . .
L$C
PGO M1
SAVE PSR TITLE
PPR    Saving the file. . .
S=
PGO M1

```

(Figure 8)

ADDING RECORDS

Figure 9 initiates the routine that will allow records to be added to the file, named A1. After the title is printed, the cursor is set to the beginning of the file.

Notice the program line that reads "F/!!!/!!!/". It is directing the text editor to find three exclamation marks, and then replace them with...three exclamation marks!

At first glance this seems like either a waste of time or the programmer has been drinking something besides coffee.

Not true. This particular use of the find command highlights what may be an error in WPL.

While the objective is to verify that three exclamation marks exist in the file, it cannot be successfully accomplished without the replacement portion of the command.

If the FIND command is used without the replacement part, it will not produce an error if the exclamation marks are not found! No error, no change in program execution, and the whole purpose goes up in smoke!

Assuming the exclamation marks have been found, the routine A2 moves the cursor to the end of the file and removes the EOF marker.

The routine named A3 moves the cursor back to the beginning of the file, then uses a command you may not be familiar with. The PLS command is used to Load a String (Load String = LS, get it?). This is a particularly useful command, so we'll take a closer look at it.

The command reads: PLS#*†††*†††, *N=\$D. Translated, this command says to load a string (PLS) from memory (#) with the information that begins with (†††) and ends with(†††) and a carriage return (,), and do not (N) include the beginning or ending markers. Assign this information to the variable \$D (= \$D).

A quick check of Figure 6 shows that the current number of records is stored between ††† and †††. The result is to place the current number of records in the file into \$D. This also shows why particular (albeit weird) formats are used in some places, as ††† is unique in the data file.

After the current number of records has been obtained, it is transferred to the numeric variable X, and incremented in preparation for the next record.

The cursor is moved to the end of the file, its direction is set forward (">"), and the record number with its unique markers is inserted into the text with a carriage return.

After the record number has been inserted, you'll notice the letter "P" without any command or parameters. In WPL, this is a comment. It is used here as a "safety valve", in the event something goes haywire with inserting the record number.

The next routine, GINFO, starts the routine that will be used to get the information for the record. The only important items are that the variable Z is set to one in preparation for the first field, and the current record number is displayed on the monitor.

The routine named LB1 will cause us to backtrack a bit. Remember the subroutine named GLB in Figure 7? Now we'll explain it.

GLB uses the FIND command to verify the existence of the field number contained in the variable Z. If the field exists, the program proceeds to the routine named FND, also in Figure 7.

If the field does not exist, the number one is assigned to the string variable \$A, and the routine ends. This indicates an "error" condition, which we'll pick up shortly.

The routine named FND then obtains the label of field number (Z), and puts it into the variable \$D. The string variable \$A is assigned the value of a 2 to indicate a "no error" condition, and the routine ends.

Jumping back to Figure 9, we find the first thing that is performed is the variable \$A is tested for an "error" condition. If \$A contains a 1, the program will branch to the label E1LAB.

If no "error", the contents of \$D, plus the colon, are displayed on the monitor. This just happens to be the label for the field. The user enters the information for the label, which is placed in \$A.

If you're a bit confused, in non-technical terms here's what happens. GLB checks to see if a particular field exists. If so, FND obtains the label.

If the field exists, it is displayed on the monitor and the user is requested to enter the information pertaining to that field.

If the field does not exist, the variable \$A is used to indicate this, and the program branches to E1LAB.

After the information for an existing field has been obtained (a null is a valid entry), the cursor is moved to the end of the file and its direction is once again set forward.

The FIND command is used to insert the field information marker ("@(Z@") and the information contained in \$A.

The next find command does nothing more than insert a carriage return after the field. Another programming oddity? Not really. A carriage return could have been used with the previous FIND command, so long as the user did not enter a comma as part of his entry. Using this method solves the problem.

From here on, Z is incremented for the next field, and the routine begins again.

The routine named E1LAB is where the program picks up if the field number was not found. This routine asks if the entry is correct, and if so, updates the current number of records in the file.

It then asks if another record is to be added, and starts the routine over if that is the case. If not, the program returns to the menu.

If the record entry was not correct, control passes to the routine named NFG (short for No Good). NFG simply erases the record, and allows the record to be re-entered.

The last routine, named ERROR, should be fairly obvious in its function. It tells you that you cannot perform any functions (adding records, etc.) without first loading a file.

WPL PROGRAM: DBDM (PART III)

```
A1 PSR TITLE
  B
  F/!!!/!!!/
  ?
  PGO A2
  PGO ERROR
A2 E
  F*,<,**
  Y?
A3 B
  PLS#+++*+++,*N=$D
  PSX $D
  PSX +1
```

```
E
D
F*,<(X)>,*
Y?
P
GINFO PSR TITLE
  PSZ 1
  PPR Record Number: (X)
LPI PSR GLB
  PCS/$A/1/
  PGO E1LAB
  PIN $D: =$A
E
D
F!!@(Z)@$A!
Y?
F*,<,*
Y?
PSZ+1
PGO LPI
E1LAB PPR
  PIN Is this correct (Y/N)? =$A
  PCS/$A/N/
  PGO NFG
  PCS/$A/n/
  PGO NFG
B
F*+++*+++,*+++*(X)+++,*
Y?
PPR
  PIN Add another record (Y/N): =$A
  PCS/$A/Y/
  PGO A1
  PCS/$A/y/
  PGO A1
  PGO M1
  PDO MB
NFG B
  PSZ-1
  F#<(X)>$(Z)@$.##
  Y?
  PGO GINFO
ERROR PPR NO FILE HAS BEEN LOADED!
  PPR
  PIN Press RETURN to continue:
  PGO M1
```

(Figure 9)

This appears to be an appropriate place to end this month's session. I'll make use of the remaining 2K for insights of what lies ahead for this column (unless, of course, those in charge of this publication see otherwise).

In coming months, we'll explore the lesser used features of AppleWriter, and how they can be used for your benefit. You'll be surprised to discover how many different ways the Glossary, the Find command, and even the "Help" menu, can be used. Naturally, we'll continue to explore the unique and exciting benefits of WPL.

So if you have anything you would like to see discussed, if you've run across an interesting application, or perhaps you've encountered a problem you just can't solve, now's the time to speak up. Until next month....

Dollars & \$ense

Reviewed by Kenn Chapman

“**T**he Home Accountant” by Continental Software has enjoyed the reputation of being the finest home accounting package available for the “microcomputer” for the last two or three years. This may very well have been the case by default—until now. With the introduction of “Dollars & \$ense” by Monogram, “The Home Accountant” should very quickly move to third place in the standings, a place it has rightly deserved from the beginning.

Dollars & \$ense claims to be suitable not only as a home accounting package but also for small businesses. In fact, it does come *almost* close to presenting a complete chart of accounts, with the exception of making any provision for “equity” accounts (a shortcoming that can be overcome). For home accounting purposes with the emphasis on cash flow accounting, this is alright; for a business that must segregate such information as invested capital and accumulated retained earnings, Dollars & \$ense has to be “manipulated” a little bit.

Dollars & \$ense is a truly powerful piece of software. After working with it for a while, you learn to maneuver its features to suit your own accounting style. It’s this element of flexibility that provides a lot of the package’s power that is sadly lacking in many other “popular” packages.

Features

The program system consists of two disks: the Boot disk and the System disk. From the top-level menu, the user is given the opportunity to “create” a data disk, in which case you must reinsert the Boot disk to continue with the creation process. However, this is one of the few times you must “toggle” between the Boot disk and the System disk. Operating the system with one disk drive is possible, although a second drive is recommended for your data disk.

The program is menu-driven; menu choices are made by selecting a letter, thereby highlighting the chosen option. The option is “executed” by pressing “P” for proceed or “Q” to quit/abort. I found this aspect of the program to be distracting. I am a slave of my habits, and one of those habits is to reach quickly for the RETURN key if the command is not instantly executed.

Error traps are reasonably well handled, although it’s always possible for someone to find a way to foul things up. RESET causes a warm boot; if the Boot disk is not in Drive #1, the user will be prompted to insert it. Control-C follows the Pascal convention of “accepting” entered/changed data in the Entry or Edit modes. The Escape key is used as a reverse Tab key, a feature that makes it easy to change data that may have been entered in error several fields back.

Video display follows the Pascal conventions; if you have 80-column capabilities, then all is fine. If you have only 40-columns, Dollars & \$ense requires using Control-A to toggle between the left and right side of the 80-column display.

For those who are inexperienced in setting up an accounting system, Dollars & \$ense comes to the rescue in style. It provides three sets of accounts for you to start with—Tax Preparation, Household, and Business. Each of these sets can be edited, added to, or rearranged in any order that suits the user.

A 3-digit numeric account code is used for ordering the accounts in a proper accounting sequence for reports; otherwise accounts are displayed and accessed in alphabetic sequence. To enter an account description, the user types the first two or three characters. If these characters are used for more than one description, the arrow keys permit scrolling through all the possibilities until the correct one can be selected

with RETURN. One very nice feature of Dollars & \$ense is the ability to list/scroll all the accounts on the screen whenever such information would be helpful.

Dollars & \$ense allows you to add/change accounts as you go along, as well as setting or changing budget amounts for each account. Budget amounts are entered as a “monthly” amount or as a Variable Budget, which allows you to enter a different amount for each month.

The accounting cycle can be as long or as short as you wish to make it. When the data disk is created, you tell Dollars & \$ense the starting month (usually January) and the name of the “file” for that disk. Normally, one year’s data would be accumulated in a single file, although the user is not restricted here.

Data Entry

Data is entered (or edited) through a Base account (e.g., the Checking account), and the transaction is then distributed to any other account(s) (yes, that can be plural). With the Checking account, the next check number is automatically displayed with the cursor resting on that field. RETURN accepts that check number; to override this, type another check number, “D” for deposit, “M” for miscellaneous or “V” for void. Dollars & \$ense automatically positions the cursor in the most logical amount column for a check or a deposit; however, this can be overridden by entering the amount with “S” for shift instead of RETURN.

When you are finished entering transactions, type Control-C to accept the entries. You are then prompted to Save the data, Edit the data, Remove a transaction, or enter more New transactions. When you Save the transactions, all the accounts are updated and saved to the data disk. Dollars & \$ense does not leave you in suspense as this process is carried out. It displays a nice little summary on the

Officers

President

David Alpert
880 Melody
Lake Forest, IL 60045
312 295 6078

Vice President

SIG Coordinator
Louis Milrad
15 Sydnor Rd.
Willowdale, ONT
Canada M2M 2Z9
416 222 8447

Vice President

Harlan Felt
4277 McKinnon Dr.
San Jose, CA 95130
408 554 5211

Secretary

JoAnne Shane
7880 Tassayara Rd.
Pleasanton, CA 94566
415 828 5744

Treasurer

Allen Sneider
Two Center Plaza
Boston, MA 02108
617 742 6100

IAC Office Manager

Karen Zinsmeister
908 George St.
Santa Clara, CA 95050
408 727 7652

Region Area

- | | |
|---|--|
| 1 | CA zips 94100 & up,
WA OR, NV, HI, AK
& American Samoa |
| 2 | So. CA zips 93999
& down |
| 3 | AZ, NM, TX, OK,
AR, MO, LA, MS,
TN |
| 4 | ID, UT, MT, WY,
CO, ND, SD, NE,
KS, MN, IA |
| 5 | WI, IL, MI, IN, KY |
| 6 | PA, NJ, FL |
| 7 | ME, CT, MA, NH,
RI, VT, NY, DC |
| 8 | OH, WV, MD, DE,
VA, NC, SC, GA, AL |

Directors

Director, Australia

Peter Kazacos
P.O. Box 505
Bankstown, N S W
Australia 2200

Director, Canada

Auby Mandell
409 Queen St. W.
Toronto, ONT
Canada M5V 2A5
416 593 9862

Director, Japan

Dr. Steven Bellamy
#212, Estate Ichikawa Osu
3-16-13 Osu
Ichikawa City, Chiba, Japan
0473 79 0098

Director, Region 1

Joyce Conklin
629 Ventura Ave.
San Mateo, CA 94403
415 341 6955

Director, Region 2

Jim Simpson
1925 Meadow Brook Dr.
Thousand Oaks, CA 91362
805 492 3391

Director, Region 3

Mike Kramer
2218 Running Springs
Kingwood, TX 77339
713 358 6687

Director, Region 4

John Wrenholt
1301 N. 19th St.
Norfolk, NB 68701
402 379 4680

Director, Region 5

Barry Bayer
18110 Martin
Homewood, IL 60430
312 799 3180

Director, Region 6

Neil Lipson
29 S. New Ardmore
Broomall, PA 19008
215 356 6183

Director, Region 7

Allen Sneider
Two Center Plaza
Boston, MA 02108
617 742 6100

Director, Region 8

Tom Wysocki
7047 E. Jefferson Dr.
Mentor, OH 44060
216 942 7086

Special Interest Groups

Apple III

Don Norris
1850 Union St. #494
San Francisco, CA 94123
415 921 3774

Calc Applications

John Hunter
58 McClure Crescent
Scarborough, ONT
Canada M1B 1J6
416 292 2590

Data Management

Malcolm Slovin
10515 Tabor St. #1
Los Angeles, CA 90034
213 837 3741

Dental

Ellis Neiburger
33263 N. Cove
Wildwood, IL 60030
312 244 0292

Education

Ted Perry
2331 Rainbow Ave.
Sacramento, CA 95821
916 485 1690

Family

David Stern
6921 Old Stage Rd.
Rockville, MD 20852
301 881 2543

Games

Jim Eatherly
3342 18th St. NW.
Washington, DC 20010
202 232 6046

Health Services

Terry Mikiten
Asst. Dean
Univ. of Texas
7703 Floyd Curl Dr.
San Antonio, TX 78284
512 691 6367

Laboratory Applications

Dr. Jaime Prilushy
San Martin 7500
5503 Carrodilla
Mendoza, ARGENTINA

Languages

Ed Titlebaum
674 Quaker Meeting House
Honeoye Falls, NY 14472
716 275 4061

Legal

John Caluwaert
P.O. Box 821
211 S. Wheaton Ave.
Wheaton, IL 60189

Lisa

Gene Pope
3901 S. Elkhart St.
Aurora, CO 80014
303 690 7559

Medical Office Management

Alexander Kleider
28 West King's Highway
Sioux City, IA 51104

Securities Applications

John McMullen
Perry St. Jefferson Valley
New York, NY 10535
914 245 2734

Telecommunications

Craig Vaughan
7927 Jones Branch Dr. #400
McLean, VA 22102
703 471 0572

Committees

IAC Librarian

Maj. Terry Taylor
1646 Harper Ave.
Redondo Beach, CA 90278
213 372 4134

New Club Assistance

Karen Zinsmeister
908 George St.
Santa Clara, CA 95050
408 727 7652

Software Chairperson

Dr. Charles Smith
47 Buchanan Dr.
Unionville, ONT
Canada L3R 4C4
416 297 3575

THE COMPLETE APPLE ACCOUNTANT

WE MEAN COMPLETE ACCOUNTING,
JUST LIKE THE BIG COMPUTERS.
YOU ENTER DATA ONE TIME ONLY.
DATA IS USED BY ALL SYSTEMS.
DOESN'T REQUIRE A PROGRAMMER
NOR ANY COMPUTER EXPERIENCE.
STREAMLINE YOUR BUSINESS AND
INCREASE YOUR PROFIT TOTALS.



THE FLEXIBASE ACCOUNTING FAMILY WE DO ACCOUNTING RIGHT!

The Flexibase Family operates from a series of Menus. All you do is make choices from the screens. We define the screens that input your data by names you're familiar with. Your data is edited for typo's and spelling errors. Your inventory is controlled like you wouldn't believe. Using, inventory on hand, inventory on order, sales history, seasonal variation, and expected leadtime, the system recommends what to buy. It makes out purchase orders automatically, then checks received merchandise against the purchase orders for completeness. It pays your bills taking advantage of trade discounts, if desired. It does your payroll, for hourly, exempt and salaried employees. It calculates all the deductions, and prints your checks. It prepares your FICA and tax deduction reports. It collects the money people owe you. It sends out your invoices and applies the payments received to the correct item. It collects your overdue accounts and returned checks by writing a series of "dunning" letters, each one getting more serious. This collects most of your bad accounts without giving up a fee to a collection agency. The system will maintain a mailing list for you. This can be a list of: customers, salesmen, birthdays, Christmas, or whatever your needs. It can write letters for you. It can take a pre-written letter, insert information into the letter from your mailing list, and rearrange the letter to allow for varying length names or other data from the list. The system will print your profit and loss statement. It will give you cost control reports, and profit distribution reports.

All you do is conduct your normal business and input the data as you do. Flexibase is flexible. It bends to match your business, instead of having to bend your business to meet some fixed computer system. Flexibase can do much more than listed in this brief description. Send today for a more complete description to:

JOHNSON PRODUCTS
P.O. BOX 555
DRAPER, UTAH 84020

Apple Macintosh:

Review of New Products

Edited by Gene Wilson

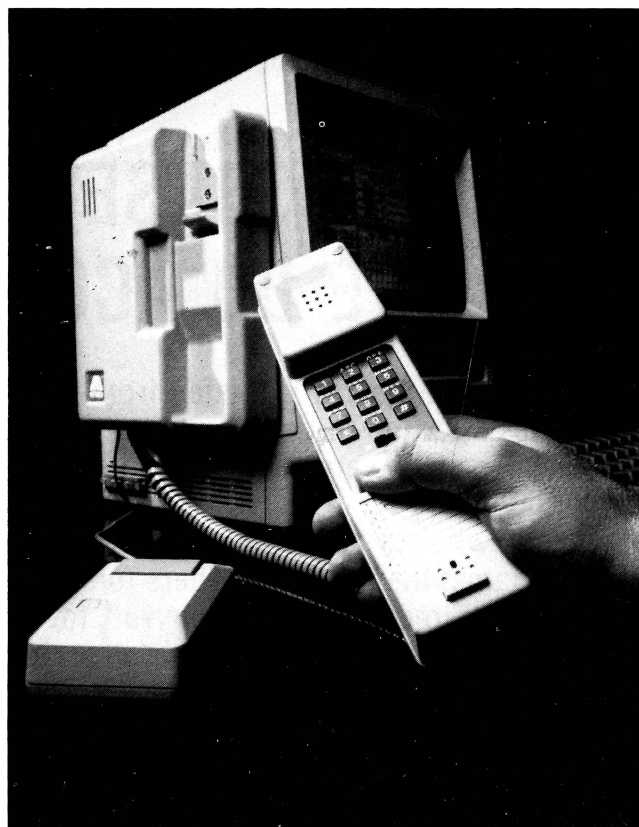
New from Haba Systems:

- **Habadex** integrates database management and custom list/label generation, monthly calendar and daily appointment schedules, telephone dialing, mail merge and form letter capability into a single package. The desktop phone directory and appointment books can be entered and manipulated at surprising speed using the mouse. \$199.95.
- The **HabaDialer**, is a telephone adapter box for use with Haba's Habadex program. Box allows tones generated by the program's autodial mode can be heard by a telephone. \$49.95.

Videx offers the following programs:

- **Mac Calendar** is an accessory program that is stored in memory with the other Macintosh accessories (notepad, calculator, scratchpad...). This means that the calendar and alarm clock are available for use even when other programs are being run. \$89.00.
- **Fun Pak** is the first of the Entertainment series. The package includes three card games and Four-In-A-Row; a strategy game that pits you against the Macintosh or another opponent. \$39.00.
- **Mac Checkers with Reversi**. \$49.00.
- **Mac Gammon**; Also includes Cribbage. \$49.00.
- **Mac Vegas**; Six casino games from Las Vegas. Poker, Craps, Keno, Blackjack, Roulette, and Slots are included. \$59.00.
- **McPic!**, from Magnum Software, is 130 ready-to-use pictures for the Macintosh computer. This push-button library of pictures can be modified using the full power of MacPaint. Any picture (actually any element within the picture) can be expanded or reduced in size; tones and patterns can be changed; any part can be duplicated, modified, changed, cloned, or combined with other elements; words can be added. \$49.95. Volume 2 includes another 150 pictures. \$49.95.

- **MacPhone TeleManagement System**, by Intermatrix, includes the MacPhone telephone handset and base, software package, operator's manual, connecting cords and plugs. The program stores up to 200 names and telephone numbers, is compatible with touch tone, long distance phone services (prefixes of up to 22 digits can be stored), and creates a phone log of calls made. \$195.95.



Softtech Microsystems offers the following programs:

- The **UCSD Pascal Development System** allows access to mouse, graphics and text fonts provided by the Mac ROM routines. UCSD and Apple Pascal are sufficiently compatible so as to allow easy porting of Apple II and Apple /// programs to the Macintosh. \$195.00.
- The **FORTAN-77 Development System** provides the user with an ANSI-77 subset FORTRAN with support for structured programming and improved character types. \$295.00.



Here's What They're Saying...

Become an Expert on Your Apple*
Computer With These Essential
Books and Utilities From

QUALITY SOFTWARE

through the
INTERNATIONAL APPLE CORE



Beneath Apple DOS—covers all facets of the Disk Operating System in the Apple II and the Apple //e. It discusses the various versions of DOS, formatting, disk protection, customizing DOS to your needs, and much more. 176 pages. **\$19.95**

by Don Worth & Pieter Lechner

"So much information is crammed into this 160-page spiral-bound manual that it could have been titled *Everything You Ever Wanted to Know About DOS (But Apple Didn't Tell You)*."

—Softalk, July 1981

Understanding the Apple II—covers the Apple II hardware, including chapters on RAM, ROM, the disk controller and logic state sequencer, the 6502 microprocessor, video generation, and more. Eleven appendices, a glossary, an index, and schematics are included. 350 pages. **\$22.95**

by Jim Sather

"Packed with vital information and fascinating insights, beautifully and clearly written, *Understanding the Apple II* is as excellent as its subject. What a bargain! It would be so at any price."

—Prof. Ben Helprin, San Jose State University, CA

And a Super Utility With Complete Documentation...

Bag of Tricks—is the best set of utilities available for your Apple II or //e. The four programs are: TRAX, to examine tracks and diskette formatting information; INIT, to reformat one or more tracks; ZAP, a programmable sector editor; and FIXCAT, to repair damaged diskette catalogs. Diskette and 160 page manual. **\$39.95**

by Don Worth & Pieter Lechner

"The true craftsman... is usually satisfied with nothing but a truly professional tool. That's the category *Bag of Tricks* belongs in."

—Microcomputing, November 1983



INTERNATIONAL APPLE CORE
908 George Street, Santa Clara, CA 95050
MC/VISA (408) 727-7652

IAC Members ask about special discount rates.

*Apple is a trademark of Apple Computer, Inc.

Set Up Your **DOT MATRIX PRINTER**
With a Touch of a KEY!

PCP™

PRINTER CONTROL PROGRAM

No longer do you have to enter long "set up strings" to take advantage of your DOT MATRIX PRINTER's capabilities. Just select from the MENU...let your computer do the rest! Condensed Characters, Double Strike Printing, Emphasized Characters, Special Line Spacing, and more! Comes complete with PROGRAM DISKETTE and OPERATING MANUAL. Includes information on how to program your printer in Basic, VisiCalc®, Applewriter. PCP is a very handy utility program you will use again and again!

VERSIONS:

**Apple II, II+, IIe and III
WITH**

**Apple DMP & Imagewriter
Epson MX*, RX & FX Printers
C.Itoh Prowriter I & II
NEC PC8023A
Okidata 82A, 83A, 92, 93 & 84
Gemini Star 10, 10X & 15**

PRO/PAC

14925-A Memorial Drive, Dept. A
Houston, Texas 77079
(713) 496-1179

* Requires Graftrax Plus™ For Full Features

EPSON PRINTER CONTROL PROGRAM

PRINTER OPTIONS

A CONDENSED	G 4 LINES/INCH
B DOUBLE WIDTH	H 8 LINES/INCH
C ITALICS	I 10 LINES/INCH
D HALF SIZE	J SPECIAL SPACING
E EMPHASIZED	K UNIDIRECTIONAL
F DOUBLE STRIKE	L BIDIRECTIONAL

SOME COMBINATIONS

M EMPHASIZED DOUBLESTRIKE
N DOUBLEWIDE EMPHASIZED
O DOUBLEWIDE EMPHASIZED DOUBLESTRIKE
P CONDENSED DOUBLEWIDE
Q CONDENSED DOUBLEWIDE DOUBLESTRIKE
R CONDENSED DOUBLESTRIKE
S CONDENSED HALF SIZE
T RETURN TO STANDARD SETTINGS

> TYPE LETTER, PRESS RETURN (0 ENDS)

**THIS IS WHAT THE EPSON MX
VERSION MENU LOOKS LIKE**

**Be sure to specify BOTH
microcomputer and printer to
obtain correct version.**

ONLY \$29.95

plus \$2.00 shipping and handling USA

VISA and MasterCard Credit Cards

See Your Dealer or Write or Call Us!

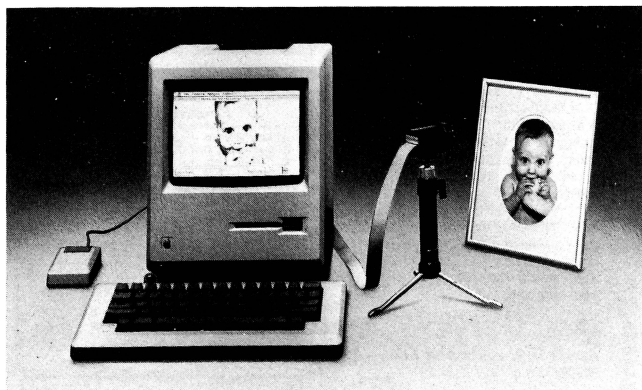
APPLE is a registered trademark of Apple Computer, Inc.

ATTENTION: Authors and Artists

You can turn your Apple Computer knowledge and interest into \$\$\$\$\$. We are on the lookout for interesting, well written articles, programs, application stories, cartoons, computer related crossword puzzles, etc. For additional information and guidelines, contact:

Editorial Department
Apple Orchard Magazine
P.O. Box 6502
Cupertino, CA 95015

- The **MicronEye**, by Micron Technology, Inc., is an imaging peripheral that allows the Macintosh to take pictures. The package includes tripod, lens, hardware, software and user's guide. Pictures can be enhanced and customized using the MacPaint program. \$395.00.



- A **"C" Compiler software development system**, by Manx Software Systems, is available in two versions, a personal system called Aztec C68K-p, and a commercial system called the Aztec C68K-c. A set of development utilities called the Aztec C68K Toolbox is also available.
- **MacModem**, by Microcom, includes hardware, software, cables and a free subscription to the Dow Jones News/Retrieval Service with one free hour of use. The direct-connect modem supports auto-dial and auto-answer, and is Bell 212A compatible (0-300 baud, and 1200 baud). \$699.00.
- **1stBase**, by DeskTop Software, is a relational file handling and report writing system. The program offers multi-file capability, user-defined file formats, automatic generation of data entry screens, nested sorts up to 10 keys, and use of all Macintosh editing features. \$195.00.

Corvus offers **OmniDrive**; mass storage Winchester disks, in four capacities:

- 5 Megabytes, \$1795.00;
- 11 Megabytes, \$2495.00;
- 16 Megabytes, \$3195.00;
- 45 Megabytes, \$4995.00.

- **DBMaster**, by Stoneware, is a database management system. It operates on a Macintosh with at least one drive. Files can span multiple disks; up to 44 floppy disks or 20 megabytes on a hard disk. \$195.00.

- **ThinkTank 128**, by Living Videotext, an outline processing program, makes full use of Macintosh technology. This new version allows fast processing of text by "clicking" options with the mouse.

- **Filevision**, from Telos Software Products, is an object oriented filing/drawing system. Users can draw a picture, then link information to objects in that picture.

Objects can be combined together in a common category so that the user can create layered or hierarchical effects. \$195.00.

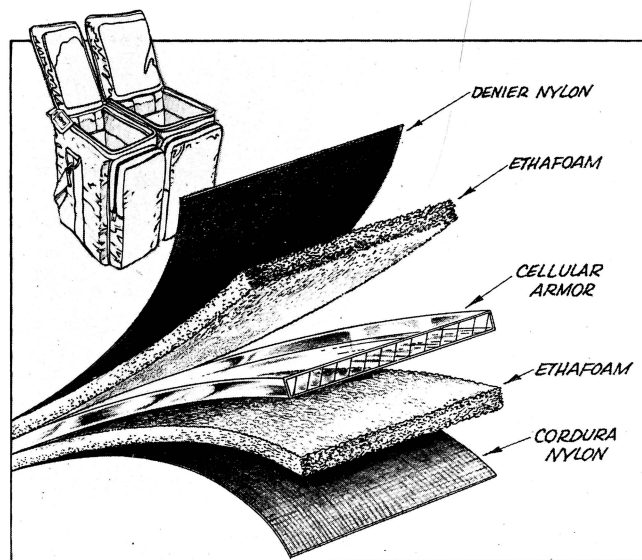
Letter quality printing is available from **Creighton Development**:

- **ProPrint** is mouse driven, and uses pull down menus. It supports MacWrite formatting options. Up to 50 files can be specified for sequential printing. \$74.00.
- **ProPrint with shielded cable**, \$99.00
- **ProPrint with A/B switch and 2 shielded cables** allows the user to switch from an ImageWriter to a letter quality printer. \$225.00.

- **Softmaker II**, from Rio Grande Software, is a data-base oriented program generator for use with Microsoft BASIC. The package includes the Softrep report program and the Softsort sort/merge program. \$150.00.

- **Straight Talk**, by Solutions, Inc., enables users to communicate with Dow Jones News/Retrieval, other on line data bases and other computers. The program makes extensive use of the mouse, pull down menus and the Macintosh desk accessories.

- **The Macintosh Bag**, by Kiwi, holds the Mac's CPU/monitor, keyboard, mouse, cables, extra disk drive, and a modem. The multi-layered bag is three-quarters of an inch thick, lightweight, and waterproof. \$129.95. A second version includes a second bag that holds the Imagewriter printer; the two bags zip together. \$199.95.



- **ExperLOGO**, by ExperTelligence, includes full integration of the Macintosh user interface techniques, including pull down menus, multiple windows, help screens and extensive use of the mouse. An Expert Systems Development Language is planned for 1985.

- **PFS:FILE** and **PFS:REPORT** have both been completely redesigned to work with the Macintosh. Each program is \$125.00.

PRINT-QUICK™

Frustrated trying to get all those fancy printer features to work? **PRINT-QUICK** - the high performance printer control program featuring:

- EXTREMELY EASY to use with PLAIN ENGLISH display of all print options.
- JOYSTICK OR KEYBOARD selects options.
- PREVIEW SAMPLE TEXT with selected features.
- SET-UPS CAN BE EDITED AND SAVED in convenient EXEC files. Many frequently requested set-up EXEC files are supplied.
- POWERFUL ELECTRONIC TYPEWRITER EMULATION. No need to boot your word processor for a quick note. Supports Apple 80 column card.
- Detailed HELP SCREENS and ERROR DIAGNOSTICS allow immediate use of PRINT-QUICK.
- The coveted THIRD WAVE FREEBIESTM - substantial no charge software, including powerful GRAPPLERTM card support.
- All BASIC code is listable by the user.
- NO COPY PROTECTION ON OUR DISKS.
- Apple approved CLOCK CARDS supported.
- DOS 3.3 and ProDOS versions for Apple II+, IIe, and IIc.

\$39.95

including postage!
(Continental U.S.A.)



ORDER BOTH programs for only \$69.95 and receive two Third Wave diskettes FREE or 20% discount towards a box of 10!



PIC-QUICK™

At last! All the most sought after text and graphics screen capabilities integrated into a single easy-to-use product.

- POWERFUL GRAPHICS MANIPULATION - simply move your "Magic Square"™ around using joystick or keyboard to instantly do screen to screen transfers, draw routines, inverses, and fills. Excellent for "cut & paste" work. Hi-res screens of electronic symbols included. Fast DOS! HI-RES Images load in 3 seconds!
- PRINT GRAPHICS WITH A SINGLE KEYSTROKE - just the area inside your "Magic Square"™ (with magnification) or the full screen!
- EASY TEXT AND GRAPHIC FILE MANAGEMENT - browse thru your picture or text files, compare screens, save, delete, & rename files.
- DETAILED HELP SCREENS and a KEYBOARD OVERLAY allow immediate use of PIC-QUICK.
- EXTREMELY EASY TO USE MENUS. Selections may be made via keyboard or joystick.
- The coveted THIRD WAVE FREEBIESTM - substantial no charge software, including powerful GRAPPLERTM card, MOCKINGBOARD™ sound effects and speech, and clock card support.
- PIC-QUICK enhances other graphics software.
- ALL BASIC code is listable by the user.
- NO COPY PROTECTION anywhere on our disks.
- DOS 3.3 and ProDOS versions for Apple II, II+, IIe, and IIc.

\$39.95

including postage!
(Continental U.S.A.)

PRO / DISKS™ - Double-sided/double-density, reinforced hub, notched on both sides, lifetime guaranteed. Don't compromise on disk grade when you can afford the best. Mention this ad when ordering PRINT-QUICK or PIC-QUICK and receive a free PRO / DISK or 10% discount towards a box of 10! Box of 10 PRO / DISKS - \$31.50
10 Boxes (100 PRO / DISKS) - \$250.00.

PRINT-QUICK and PIC-QUICK support the most popular printers and interfaces.

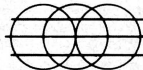
(Specify printer and interface with order)

Third Wave believes in customer support - guarantees satisfaction. Ask your dealer for PIC-QUICK and PRINT-QUICK or order direct, TOLL-FREE.

1-800-631-6973

MC, VISA, C.O.D. & Mail Orders Welcome. Ship same day.

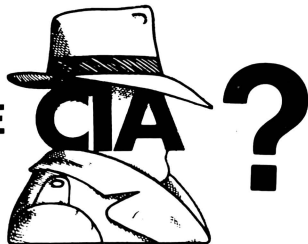
PIC-QUICK & PRINT-QUICK © THIRD WAVE TECHNOLOGY INC. 1983-84/PIC-QUICK, THIRD WAVE FREEBIES, and THIRD WAVE TECHNOLOGY are reg. TM of THIRD WAVE TECHNOLOGY, INC.
Apple II is a reg. TM of APPLE COMPUTER, INC. / GRAPPLER is a reg. TM of GRAPPLER MICRO, INC. / MOCKINGBOARD is a reg. TM of Sweet Micro Systems, Inc.



THIRD WAVE TECHNOLOGY INC. © 1984

16309 Elsienna Ave., Cleveland, OH 44135 216/671-8991

WHO LIKES THE



HERE ARE JUST A
FEW OF THE MANY

- "an essential part of the Apple-user's repertoire" - APPLE USER
- "a valuable buy ... manual is practically worth having on its own" - WASHINGTON APPLE PI"
- "the folks at Golden Delicious should be commended ... worth waiting for" - HARDWARE COMPUTIST
- "multifaceted" - NIBBLE
- "the most comprehensive disk accessor I have ever come across" - A.B., VERNON, CANADA
- "its ability to unlock other programs will greatly help me" - DR. B.P., SAN FRANCISCO, CALIFORNIA
- "an excellent set of programs ... just great - and good value too" - E.A.S., MILTON KEYNES, ENGLAND
- "very, very educational ... great manual ... it is FANTASTIC!!!!!!" - J.C., TUCSON, ARIZONA
- "a very enlightening piece of software/book ... top of my list for good buys" - H.S., BLAINE, MINNESOTA
- "I like yours the BEST" - R.R., CHICAGO

Why all the excitement about the CIA (confidential information advisors)? Probably because it is the ONLY set of utilities (5 in all) which enable even a beginner to investigate, edit, locate, list, trace, rescue, translate, patch, repair, verify, examine, protect, unprotect, analyse, encrypt, and decrypt programs on normal AND protected disks. You also get the "CIA Files", a 65000+ word book which contains detailed instructions for using the C.I.A. plus easy-to-follow, hand-holding tutorials about patching, repair, formatting, encoding, protection, and numerous other disk topics. You'll find plenty of material here which has never before appeared in print. PROGRAMS NOT COPY PROTECTED

To put the 5 C.I.A. utilities, plus book, on the trail of your Apple II+/IIe (R) disks, send \$65.00 by check or money order to:

GOLDEN DELICIOUS SOFTWARE LTD.
350 Fifth Avenue, Suite 3308, Dept O, New York, New York, 10118

THE DATA BANK™

Powerful Data Base management system. Easy to use, understandable manual, menu drive, unlocked, includes all the features most needed. Comes with 30 day return policy. For more details send for overview of the product. For APPLE II+, IIe, IIc, III in E-mode. Price: \$170.00

BANNER-RAMA™

Prints neat banners for parties, games, special occasions, or signs for bulletin boards, garage sales, store sales. It has **1001 uses**. Prints 6" or 3½" letters. Fun and easy to use. Runs on Apple II+, IIe, IIc, III, Macintosh, IBMpc, PCjr. Cost \$29.00

D-LABELS+™

Tired of typing catalog to see what files are where? Use **D-LABELS+** to print **sorted** and **formatted CATALOG** labels. Special option allows printing of Mailing and Shipping labels. Comes with manual and supply of labels. Fast and easy to use. Runs on Apple II+, IIe, IIc, IBMpc, PCjr. Cost \$39.00

Specify type computer when ordering, add \$3.00 shipping. California residents add 6% tax.



Flower Soft

564 Tara
Manteca, CA 95336
(209) 239-2116

Apple II+, IIe, IIc, III, Macintosh and IBMpc, PCjr, are trademarks of Apple Computer Inc. and IBM Corp.

- The **Advanced Development Tool Kit** augments the software development environment provided with UCSD Pascal and/or FORTRAN-77. The tool kit includes source code for graphics/mouse interface, a symbolic debugger, 68000 Assembler, and a linker. \$150.00.
 - **MacTools**, by Central Point Software, is a disk utility program. Disk functions and file manipulation are available in a "pull-down menu and mouse" environment. \$39.95.
 - **ClickArt**, from the T/Maker Company, offers over one hundred professionally drawn images, ranging from useful symbols to full-page illustrations. These images can be used in any MacPaint or MacWrite file, or any other compatible applications.
 - **Professional Composer**, from Mark of the Unicorn, Inc., lets professional musicians compose, edit and print out original scores. All music text appears on the Macintosh screen as it would on an actual piece of sheet music. \$495.00.
- Megamerge** offers the following programs:
- **MegaMerge** is an extension program that gives MacWrite mail merging and "boiler plating" capabilities. It also allows "chaining" of several documents together. \$125.00.
 - **Megafiler** is a file management program which takes full advantage of the Macintosh technology. A complete library of ready-made files for host applications is included. \$195.00.

Macintosh Vendor's List:

Central Point Software, Inc.

9700 SW Capitol Hwy
Suite 100
Portland, OR 97219
(503) 244-5782

Corvus Systems, Inc.

2100 Corvus Drive
San Jose, CA 95124
Paul Smith
(408) 559-7000

Creighton Development, Inc.

4931 Birch St
Newport Beach, CA 92660
(714) 476-1973

DeskTop Software Corporation

Princeton, NJ 08540
Ms. Tarry Truitt
CN-5287
(609) 924-7111

ExperTelligence

559 San Ysidro Road
Santa Barbara, CA 93108
Anthony Uhler
(805) 969-7874

Haba Systems

15154 Stagg Street
Van Nuys, CA 91405
Rob Jordan
(818) 901-8828

Intermatrix

5547 Satsuma Avenue
North Hollywood, CA 91601
Douglas A. Levin
(818) 509-0474

Kiwi

6721 N.W. 36th Avenue
Miami, FL 33147
Richard Rohner
(212) 986-6668

Living Videotext, Inc.

2432 Charleston Road
Mountain View, CA 94043
K. Bregman
(415) 964-6300

Magnum Software

21115 Devonshire Street
Chatsworth, CA 91311
Suite 337
(818) 700-0510

Manx Software Systems, Inc.

P.O. Box 55
Shrewsbury, NJ 07701
(800) 221-0440
(201) 780-4004 in NJ

Mark of the Unicorn, Inc.

222 Third Street
Cambridge, MA 02142
Robert Nathaniel
(617) 576-2760

Megahaus Corporation

5703 Oberlin Drive
San Diego, CA 92121
Paul La Costa
(619) 450-1230

Microcom, Inc.

1400A Providence Hwy.
Norwood, MA 02062
Doug Landfield
(617) 762-9310

Micron Technology, Inc.

2805 E. Columbia Road
Boise, ID 83706
Vision Systems Group
(208) 383-4106

Rio Grande Software, Inc.

1107 Upas
McAllen, TX 78501
(512) 630-6979

Scarborough Systems, Inc.

25 N. Broadway
Tarrytown, NY 10591
Sanford Bain
(914) 332-4545

Softech Microsystems, Inc.

16885 W. Bernardo Drive
San Diego, CA 92127
Carol Volstyn
(619) 451-1230

Software Publishing Corp.

1901 Landings Drive
Mountain View, CA 94043
(415) 962-8910

Solutions, Inc.

P.O. Box 989
Montpelier, VT 05602
Charles Kittredge
(802) 229-0840

Stoneware, Inc.

50 Belvedere Street
San Rafael, CA 94901
Ellen Rony
(415) 454-6500

Telos Software Products

3420 Ocean Park Blvd.
Santa Monica, CA 90405
Charlene Dolton
(213) 450-2424

T/Maker Company

2115 Landings Drive
Mountain View, CA 94043
Robert Simon
(415) 962-0195

Videx, Inc.

Corvallis, OR 97330
(503) 758-0521

Now you can monitor and control the world (or at least your part of it) with a little help from **APPLIED ENGINEERING**

12 BIT, 16 CHANNEL, PROGRAMMABLE GAIN A/D

- All new 1984 design incorporates the latest in state-of-art I.C. technologies.
- Complete 12 bit A/D converter, with an accuracy of 0.02%!
- 16 single ended channels (single ended means that your signals are measured against the Apple's GND.) or 8 differential channels. Most all the signals you will measure are single ended.
- 9 software programmable full scale ranges, any of the 16 channels can have any range at any time. Under program control, you can select any of the following ranges: ± 10 volts, $\pm 5V$, $\pm 2.5V$, $\pm 1.0V$, $\pm 500mV$, $\pm 250mV$, $\pm 100mV$, $\pm 50mV$, or $\pm 25mV$.
- Very fast conversion (25 micro seconds).
- Analog input resistance greater than 1,000,000 ohms.
- Laser-trimmed scaling resistors.
- Low power consumption through the use of CMOS devices.
- The user connector has +12 and -12 volts on it so you can power your sensors.
- Only elementary programming is required to use the A/D.
- The entire system is on one standard size plug in card that fits neatly inside the Apple.
- System includes sample programs on disk.

PRICE \$319

A few applications may include the monitoring of

- flow
- temperature
- humidity
- wind speed
- wind direction
- light intensity
- pressure
- RPM
- soil moisture
- and many more.

8 BIT, 8 CHANNEL A/D

- 8 Channels
- 8 Bit Resolution
- On Board Memory
- Fast Conversion (.078 ms per channel)
- A/D Process Totally Transparent to Apple (looks like memory)

The APPLIED ENGINEERING A/D BOARD is an 8 bit, 8 channel, memory buffered, data acquisition system. It consists of an 8 bit A/D converter, an 8 channel multiplexer and 8 x 8 random access memory.

The analog to digital conversion takes place on a continuous, channel sequencing basis. Data is automatically transferred to on board memory at the end of each conversion. No A/D converter could be easier to use.

Our A/D board comes standard with 0, 10V full scale inputs. These inputs can be changed by the user to 0, -10V, or -5V, +5V or other ranges as needed. The user connector has +12 and -12 volts on it so you can power your sensors.

- Accuracy: 0.3%
- Input Resistance: 20K Ohms Typ

PRICE \$129.00

SIGNAL CONDITIONER

Our 8 channel signal conditioner is designed for use with both our A/D converters. This board incorporates 8 F.E.T. op-amps, which allow almost any gain or offset. For example: an input signal that varies from 2.00 to 2.15 volts or a signal that varies from 0 to 50 mV can easily be converted to 0-10V output for the A/D.

The signal conditioner's outputs are a high quality 16 pin gold I.C. socket that matches the one on the A/D's so a simple ribbon cable connects the two. The signal conditioner can be powered by your Apple or from an external supply.

FEATURES

- 4.5" square for standard card cage and 4 mounting holes for standard mounting. The signal conditioner does not plug into the Apple, it can be located up to 1/2 mile away from the A/D.
- 22 pin .156 spacing edge card input connector (extra connectors are easily available i.e. Radio Shack).
- Large bread board area.
- Full detailed schematic included.

PRICE \$79.00

DIGITAL INPUT/OUTPUT BOARD

- Provides 8 buffered outputs to a standard 16 pin socket for standard dip ribbon cable connection.
- Power-up reset assures that all outputs are off when your Apple is turned on.
- Features 8 inputs that can be driven from TTL logic or any 5 volt source.
- Your inputs can be anything from high speed logic to simple switches.
- Very simple to program, just PEEK at the data.
- Now, on one card, you can have 8 digital outputs and 8 digital inputs each with its own connector. The super input/output board is your best choice for any control application.

The SUPER INPUT/OUTPUT board manual includes many programs for inputs and outputs. A detailed schematic is included.

Some applications include:

Burglar alarm, direction sensing, use with relays to turn on lights, sound buzzers, start motors, control tape recorders and printers, use with digital joystick. **PRICE \$69.00**

Please see our other full page ad in this magazine for information on Applied Engineering's Timemaster Clock Card and other products for the Apple. Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec. components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products compatible with Apple II and //e. Applied Engineering's products are fully tested with complete documentation and available for immediate delivery. All products are guaranteed with a no hassle three year warranty.

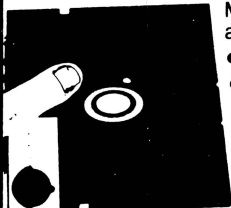
Texas Residents Add 5% Sales Tax
Add \$1.00 If Outside U.S.A.

Send Check or Money Order to:
APPLIED ENGINEERING
P.O. Box 798
Carrollton, TX 75006

Call (214) 492-2027

7 a.m. to 11 p.m. 7 days a week
MasterCard, Visa & C.O.D. Welcome
No extra charge for credit cards

*REDUCES DISKETTE COST 50%!



Make use of the back of your 5 1/4" Diskettes and SAVE

- **NIBBLE NOTCH** tools make it easy.
- Adds the precise notch where you need it.
- Doubles diskette space or MONEY BACK!

NIBBLE NOTCH I

Cuts square notch for Apple, II, II+, IIe, III, Franklin and Commodore.

only \$14.95 each

add \$1.50 each P&H (\$4.50 each foreign P&H)

DISK OPTIMIZER® SYSTEM SOFTWARE FOR APPLE, II, II+, IIe, III & Franklin

- **469% FASTER** Than Similar Programs!
- Certifies your "new" disk 100% Error Free
- Removes Bad Sectors • Adds 36th Track
- Performs Disk Drive Speed Check
- Adds DOS and More

only \$24.95 each

add \$1.50 each P&H (\$4.50 each foreign P&H)

— OR BUY BOTH —

only \$29.95

add \$2.50 each set P&H (\$6.50 foreign P&H)

Florida Residents Add 5% Sales Tax

SATISFACTION GUARANTEED OR YOUR MONEY BACK!

ORDER TODAY!

CALL TOLL FREE: 1-800-642-2536

OR SEND CHECK OR MONEY ORDER TO:

NIBBLE NOTCH COMPUTER PRODUCTS

DIVISION OF CORTAN INTERNATIONAL

4211 NW 75th TERRACE • DEPT. 65 • LAUDERHILL, FL 33319
PAT. PEND. ALL TRADEMARKS ARE ACKNOWLEDGED

NEW FROM DAVKA

A TASTE-TESTED JEWISH COMPUTER COOKBOOK



available for the Apple II+, IIe, and IIc with disk drive

For "Balebostahs," beginning cooks, or bachelors... features more than 150 of the finest recipes in Jewish cookery. The Jewish Computer Cookbook plays no ethnic favorites. It includes such selections as Rumaki, Knaidlach, Beef Teriyaki, Chili, Spinach Filo, and Biscuit Tortoni—All Kosher!

Imagine you're starting with only a few ingredients and want recipes that use them; The Jewish Computer Cookbook

will do an instant search of all the recipes for that ingredient! You can add, change or remove any recipe. Print recipes, or shopping lists! Even create your own cookbook of your family's favorite recipes. Plus the cookbook automatically calculates ingredient amounts for different serving sizes. The Jewish Computer Cookbook is only \$39.95 for the basic cookbook and recipe disk.

AN UNBELIEVABLE, UNBEATABLE BARGAIN!

Order the Jewish Computer Cookbook at the regular price of \$39.95 and get absolutely free any two of the supplementary modules. Regularly \$12.00 each.

BUT YOU DON'T TASTE JEWISH

A collection of international cuisine (French, Italian, Mexican, Chinese) adapted for the Kosher Kitchen. A wide variety of appetizers, entrees, desserts and more.

LIKE MAMA USED TO MAKE

A mouth-watering array of traditional Jewish Sabbath and Holiday cooking, with recipe suggestions adapted for each festive occasion.

THE PARTY PLACE

Having a cocktail party? a sit-down dinner? a business buffet? This disk does everything except prepare the food! From finger foods to desserts, a selection of the best in party fare.

ORDER FORM

Call toll-free 1-800-621-8227
In Illinois call 1-312-944-4070



845 N. Michigan Ave. Suite 843
Chicago, IL 60611

Yes, send me the Jewish Computer Cookbook and two free disks for only \$39.95.

Check two: ☐ But You Don't Taste Jewish ☐ Like Mama Used to Make ☐ The Party Place

Name

Address

City, State, Zip

Phone

ENCLOSE CHECK, OR COMPLETE BELOW:

Please charge my:

☐ American Express ☐ MasterCard ☐ VISA



Amount enclosed

Card #

Exp. Date Signature

The NEW Stuff

New Products For The Apple

Edited by Gene Wilson

The most comprehensive listing and description of new temptations, delicacies, and necessities for your Apple. Notice too that we've made it even easier for you to find out more about these items; just circle the corresponding number on the Apple Orchard Direct Help Card a bit farther ahead in this issue. We'll forward the requests directly to the manufacturer.

Producers of products for Apple computers should send new releases two months in advance:

NEW PRODUCTS EDITOR

Apple Orchard
P.O. Box 6502
Cupertino, CA 95015

Apple Orchard cannot be held responsible for claim made by manufacturers.

Contents

NEW FROM APPLE HARDWARE

Interface Cards
Printers/Plotters/Stand
Static Protection
Miscellaneous

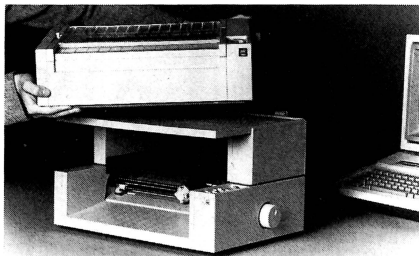
SOFTWARE

Educational
Games/Simulations
Graphics
Languages (Programming)
Languages (Languages)
Music
Personal
Utilities
Word Processing

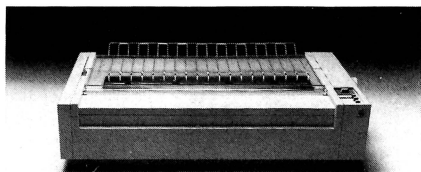
BOOKS

New from Apple

The new **Apple Stacker Stand** allows Apple Color Plotter, ImageWriter and Dot Matrix Printer users to save desk space. The plotter goes on the bottom, and the stacker accepts either an ImageWriter or DMP. \$79.00. For further information, see your authorized Apple dealer.



A wide carriage version of the **ImageWriter** dot matrix printer accepts paper sizes from 3 to 15 inches wide. This model is fully compatible with Apple II and /// computers. \$749.00. For further information, see your authorized Apple dealer.



Macintosh Pascal, in an interactive environment (interpreted), allows the user to see values of variables and

expressions change as a program executes. The program can check syntax of each Pascal statement as it is entered. Users can access the Quickdraw routines resident in the Macintosh ROM. \$125.00. For further information, see your authorized Apple dealer.

Lisa 7/7, combines fully integrated and enhanced versions of the seven original Lisa Office System applications into a single package. Includes project management, word processing, spread sheet, data communications, list manager, business graphics, and structured graphics. Enhancements include a built-in spelling corrector, more graph types, faster spreadsheet calculation, the ability to figure job costs in the project management tool, and high-quality color printing in the Canon PJ-1080A ink-jet printer. Requires one-megabyte memory version of the Lisa 2. \$695.00. For further information, see your authorized Apple Lisa dealer.

MacTerminal, is a data communications software package that allows the Macintosh to interact with mainframe and minicomputers as well as commercial electronic information services. MacTerminal also runs on Lisa 2 computers using MacWorks. \$99.00. Available through authorized Apple dealers.

AppleWriter II, version 2.0, operates on Apple //e and //c computers. New features include:

- horizontal scrolling;
- text display with page and line count;
- built-in terminal mode;
- ProDOS disk formatting utility;

Price: \$149.00. Available at your authorized Apple dealer.

Until February 1, 1985, existing

AppleWriter//e users can upgrade their software to Version 2.0 by sending their master disk, manual cover and \$50.00 to:

Apple Computer, Inc.
Apple Writer II Upgrade
P.O. Box 306
Half Moon Bay, CA 94019

The **AppleColor Monitor 100** is a 12-inch RGB monitor that works with Apple //e, and Apple /// computers. A "green only" monochrome switch lets users turn off the color display. The monitor plugs directly into the RGB output plug on the Apple ///. \$599.00. The Apple //e requires an Extended 80-column Text/AppleColor Card, which sells for \$299.00. Available at authorized Apple dealers.

Hardware

Interface Cards

Speech synthesizer systems, for Apple II computers, include a Voice Box board, disk software and an external speaker. Three units are available:

- Voice Box 3m plugs into any slot in the Apple and works with programs written in Basic or assembler language. The speaking program occupies less than 5k bytes of memory. The graphics program uses about 10k bytes. \$129.00.
- Voice Box 3i looks like a printer to word processing and report generator programs. Its card contains a text-to-speech program in ROM and a 1.5k buffer. \$219.00.
- Voice Box 3s connects to any computer by a standard RS232c serial interface. It includes an integral speaker. \$269.00.

Circle HelpCard No. 201
The ALIEN Group
27 W. 23rd Street
New York, NY 10010
(212) 741-1770

Drum-Key, an electronic music interface board and software package for use with Apple II computers, uses digital recordings of 28 actual drum and percussion instruments. The user can compose, play, and record on disk all the percussion sounds and riffs he or she can think of, plus play along with the 100 rhythm patterns and 26 songs built into Drum-Key. \$139.00.

Circle HelpCard No. 202
Peripheral Visions Inc.
Great Valley Parkway
Malvern, PA 19355
(215) 647-3930

Printers/Plotters/ Stands

The **Abati LQ-20 letter-quality printer**, is switch compatible with Qume. Print speed is 18 cps. \$479.00. For further information, contact Larry Charles, at (213) 937-7460.
Circle HelpCard No. 203
Hill and Knowlton, Inc.
5900 Wilshire Blvd.
Los Angeles, CA 90036

The **Mini-Printer Stand**, constructed of high-impact acrylic, is 22 inches wide and 13 inches deep. This stand is 5 inches high, and supports printers weighing up to 30 pounds. \$36.00.

Circle HelpCard No. 204
Omnium Corporation
P.O. Box 186
Stillwater, MN 55082
(612) 430-2060

Static Protection

The **Wire Cube** is a single outlet device for protecting personal computers from

NEVER OVERPAY YOUR TAXES AGAIN

Everyone complains about high taxes but informed taxpayers do something about it. Everyone should have a tax advisor but most cannot afford one. There is a way. Use Proforma Software's inexpensive TAX BREAK PLANNER and an Apple® or IBM-PC® or other compatible computers to get the lowest bottom-line tax on this year's tax return.

TAX BREAK PLANNER is programmed by an IRS Enrolled Agent to expose all loopholes, benefits, special deductions, and income averaging methods that are buried in the law.

Used by Financial Planners, Tax Accountants, and Informed Taxpayers across the country for years to save big tax dollars for themselves and their clients.

TAX BREAK PLANNER performs:

- ✓ TAX OPTIMIZATION
- ✓ TAX PLANNING
- ✓ WHAT-IF ANALYSIS
- ✓ TAX PROJECTIONS

Data entry is fast and easy. The program prompts you step-by-step through all inputs to get to the lowest tax. The instruction manual has clear explanations for each input line. The program prints and displays an eight page comprehensive report on the optimum tax return. It highlights areas where the greatest tax savings can be made. It has a unique report on Risk of Audit. It has a Return Overview that shows the Tax Preference income still available before a return is subject to Alternative Minimum Tax.

TAX BREAK PLANNER can be used to plan 1984, 1985 and future years too! TAX BREAK PLANNER also can be used to check a 1983 return for amendment. It will pay for itself many times over in tax savings!

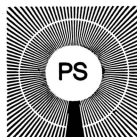
TAX BREAK PLANNER was reviewed by *The Book of Apple Software 1984* and received "Superior" scores for Overall Rating, Ease of Use, Vendor Support, Value for Money, Reliability, and Error Handling. Their summary comment is, "This is an easy-to-use, fast, and powerful program, backed by a good company".

TAX BREAK PLANNER is available for \$180.00. AMEX, MC, and VISA orders are accepted. California residents add 6% sales tax. Shipping and Handling added.

* Apple is a trademark of Apple Computers Inc. IBM-PC is a trademark of IBM Corp.

PROFORMA SOFTWARE

2706 Harbor Blvd., Suite 200-203
Costa Mesa, California 92626
714-641-3846 (in CA)
800-248-7923 (all-year hot line)



Circle HelpCard No.023



3M DISKETTES \$18.50 SS/DD (10 Disks/Box)

5 1/4" SS/DD	\$18.50
5 1/4" DS/DD	\$23.50
8" SS/SD	\$20.50
8" SS/DD	\$24.95
8" DS/DD	\$30.95

Ribbons, Storage Boxes and Labels, etc. also available. Complete price list available.

**SATISFACTION GUARANTEED
SINCE 1967**

Call (415) 778-2595

or write:

**Argonaut Distributing
1104 Buchanan Road #AO
Antioch, CA 94509**

**Add \$3.00 Shipping/Handling
VISA or MC C.O.D. Orders Add \$1.50**

Circle HelpCard No.024

**Authorized Distributor
Information Processing Products**



ATTENTION PROGRAMMERS

Our established literary agency is seeking to represent talented software authors. If you've written "The Great American Program" but are unsure how to market it or to whom or for how much, call us.

Whether it's recreational, educational or business, we'll make sure that your creation gets the audience it deserves—Top Executives at the leading software houses.

Our clients receive better treatment and earn more royalties because we negotiate the best possible deals. Give us a chance to go to bat for you. For further information on the benefits of representation, please contact:

**THE ROBERT JACOB AGENCY
(805) 492-3597**

**1642 Eveningside Dr., Ste. 110
Thousand Oaks, CA 91362**

Circle HelpCard No.025

voltage spikes or surges from RFI. \$39.95.

Circle HelpCard No. 205
Network
203 Harrison Place
Brooklyn, NY 11237
(212) 821-7555

Miscellaneous

ROM resident character generators are available for the following dot matrix printers: C.Itoh 8510 and 1550, TEC TE8510 and TE1550, NEC 9023 and 8025, Apple DMP and DEC LA50-RA. The semi-custom character sets are available in CURSIVE, ITALICS and REVERSED. Unlike graphics mode, these characters will print at full speed.

Circle HelpCard No. 206
Indian River Scientific
P.O. Box 507
Melbourne, FL 32902

The **CRT Optimizer**, an Anti-Glare Lens with either green or gray tint, eliminates CRT glare can be custom fitted to every leading personal computer monitor. The etched polyester lens attaches to the monitor's surface without tools. \$39.00.

Circle HelpCard No. 207
Omnium Corporation
P.O. Box 186
Stillwater, MN 55082
(612) 430-2060

The **Falcon Diskette File**, for 5 1/4-inch diskettes, is designed with eight separate, but fully enclosed, flip-back compartments. Each compartment holds up to seven diskettes with sleeves. Up to 56 diskettes may be stored. \$24.95.

Circle HelpCard No. 208
Falcon Safety Products, Inc.
Dept. V, 1065 Bristol Road
Mountainside, NJ 07092

Software

Educational

The Write Choice, for Apple //e and //c computers combines a word processor, typing instruction software, a grammar style guide, and an extensive typing style guide. Twenty-three lessons are devoted to teaching the DVORAK keyboard; twenty-four to the standard QWERTY keyboard. \$44.95.

Circle HelpCard No. 209
Roger Wagner Publishing Inc.
10761 Woodside Avenue-Suite "E"

Santee, CA 92071
(619) 562-3221

Software Images announces three programs for the Apple II computer:

- **Beginning Keyboarding** features four levels, with individual letters, numbers and words. \$14.95;
Circle HelpCard No. 210
- **The Typing Factory** uses a game format with five activity choices and three typing speeds. \$14.95;
Circle HelpCard No. 211
- **Grab Bag for Kids** is six learning programs with color and sound. \$14.95.

Circle HelpCard No. 212

All three programs can be purchased for \$13.45 each.

Software Images
4264 West Broadway
Minneapolis, MN 55422

SEI has released the following educational software packages for the Apple II Plus and //e computers:

- **SEI Literature Series**, for high school and first year college students, includes 26 disks which cover the standard high school literature curriculum. Each diskette contains a data base of approximately 300 multiple choice questions with hints and in-depth analyses. Products are available separately for \$30.00 per disk, or in a complete set for \$660.00.
Circle HelpCard No. 213
- **SEI History/Government Series**, for high school and first year college students, includes ten diskettes which cover the standard high school history curriculum. Products are available for \$30.00 per disk or as a set for \$255.00.

Circle HelpCard No. 214

- **History of Space Flight** disk, includes a data base with hundreds of questions covering the Space Age from inception to the present. \$30.00.

Circle HelpCard No. 215

SEI (Sliwa Enterprises, Inc.)
2360-J George Washington Highway
Yorktown, VA 23692
(804) 898-8386

Bank President, for Apple II, //e, //c and Macintosh computers, is a game that teaches the fundamentals of business strategy and decision making through role-playing games. \$74.95. For further information, contact Dan Lewis at (415) 853-1220.

Circle HelpCard No. 216

Lewis Lee Corporation
1646 Portola Ave.
Palo Alto, CA 94306



The Apple's Apprentice, is a magazine specifically directed towards teenagers with Apple computers. The magazine is published by Emerald City Publishing, Inc., whose principals are Roger Wagner as publisher and Val Golding as editor.

Circle HelpCard No. 217
Emerald City Publishing, Inc.
P.O. Box 582-AA
Santee, CA 92071
(619) 562-7785

Classmate, for Apple II, II Plus, and //e computers, is a complete classroom grading and attendance software package. It allows the user to enter, modify and store an unlimited number of class lists of up to 51 students each. It stores grades, attendance records and teacher comments, computes weighted averages, graphs grade distribution, class rankings and final grades. \$49.95. For additional information, contact Dr. Jan Davidson, at (213) 383-9473.

Circle HelpCard No. 218
Davidson & Associates
6069 Groveoak Place, #12
Rancho Palos Verdes, CA 90274

CONDUIT, the educational software publisher at the University of Iowa, has announced the release of nine new educational software packages for Apple II, II Plus and //e computers running under DOS 3.3:

- **Family Identification** assists students in learning about 74 major flowering plant families in North America. \$50.00.

Circle HelpCard No. 219

- **Acid-Base Titrations**; includes eight programs. \$75.00.

Circle HelpCard No. 220

- **Chemical Principles for the Introductory Laboratory** illustrates the principles and methods involved in five main areas of general chemistry. \$75.00.

Circle HelpCard No. 221

- **Phonics: Decoding for Teachers**; eight programs to help preservice and inservice teachers master the decoding concepts of phonics and structural analysis. \$75.00.

Circle HelpCard No. 222

- **School Transactions**; four simulations that introduce preservice and inservice teachers to the realities of human transactions in schools and to specific communications models. \$75.00.

Circle HelpCard No. 223

- **Lecciones de Espanol**; seven tutorial lessons that allow students to practice applying some of the most troublesome points of Spanish grammar. \$110.00.

Circle HelpCard No. 224

- **Topics in Research Methods: Main Effects and Interactions**; helps students discern whether

flashcardTM

Instant disk response for Apple® computers.



The power to cover big business software.

Breeze through business software at lightning speed. Say good-bye to "disk wait" delays caused by constant disk accessing. Instead, run programs up to ten times faster as you enjoy the instant response of solid state memory. **Flashcard** is a plug-in memory board that makes the Apple II series* think it's still working the floppy.

For disk intensive programs like WordStarTM, InfoStarTM and dBase IITM you need **flashcard** to eliminate the unproductive time delays of returning again and again to disk memory. And **flashcard** now supports the Home AccountantTM software as well.

In fact, **flashcard** supports the following operating systems: DOS 3.3TM, Pascal 1.1TM, Pascal IV.1TM, ProDOSTM, CP/MTM, PCPITM, CP/M+TM, ALSTM and CP/M SoftcardTM.

Time is money so start saving immediately with **flashcard**.

144k one disk capacity \$395

288k two disk capacity \$595

We're so confident about your satisfaction with **flashcard**, we offer a 30-day money back guarantee.

Call us direct, toll-free, and place your order.

800-426-7412

*Does not include IIc.



Syntex Inc.

10635 N.E. 38th Place
Kirkland, WA 98033
(206) 828-4884

In Canada: Exclusively by Checco Computing,
Mississauga, Ontario, (416) 821-7600.

flashcard; Apple, DOS 3.3, Pascal 1.1 and ProDOS; WordStar and InfoStar; dBase II; Home Accountant; Pascal IV.1; CP/M; CP/M PCPI; CP/M+ ALS; and CP/M Softcard are registered trademarks of Syntex Inc., Apple Computer Inc., MicroPro, Ashton-Tate, Continental Software, Softech, Digital Research Inc., PCPI, ALS, and Microsoft Corp. respectively.

In Australia, call CompuMusic.
(02) 692-8875, Glebe, New South Wales.

Advertisers' Index

Page	Advertiser	Help#	Page	Advertiser	Help #
1	ALF Products	002	51	Flowersoft	018
27	Apple Country	009	51	Golden-Delicious	019
13	Applied Concepts	005	40	Happ Electronics	012
53, 68	Applied Engineering	038	45	Hardcore Computist	013
56	Argonaut	024	49, 65	Int'l Apple Core	014
66	B & D Electric	036	56	Jacobs, Robert, Ltd.	025
61	Baudville	028	47	Johnson Products	015
5	Central Point Software	003	30	McGraw-Hill	010
11	Checkmate Technology	004	64	Mega Data Computers	033
65	Apple Orchard	034	63	Orbital Systems	032
53	Cortran International	021	55	ProForma Software	023
66	Custom Computer Products	037	49	Pro Pac	016
17	Data Technology/Teammate	006	34	Protecto	011
53	Davka Corp.	022	23	Quorum International	008
Cover 2	Dennison	001	49	Apple Orchard	017
65	DLS Data Systems	035	57	Synetix	026
23	Douglas Electric	007	51	Third Wave Technology	020
62	ElekTek	029	Cover 4	Thunderware	039
63	Expanding Space	030	Cover 3	Videx	040
63	Fiberbilt	031	58	Wolston's	027

Human Resource Information

a Microcomputer Approach

by Aaron S. Liswood

A new book for managers responsible for human resource, personnel, and compensation program administration. HRI and compensation professionals will find it invaluable!

In plain language, nationally-known consultant and lecturer A. S. ("Woody") Liswood details a practical schema for a complete personnel department data base. Mr. Liswood also presents reviews of microcomputer hardware and software products applicable to the personnel/human resources management process in today's era of ever more

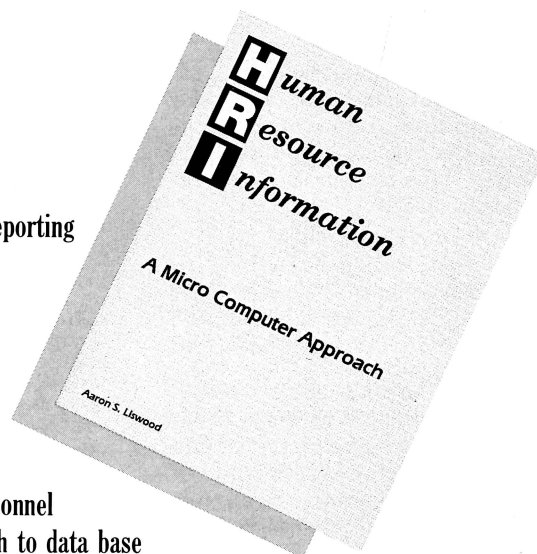
stringent regulation and reporting requirements.

The book is a complete guide for the human resources professional trying to harness the power of the micro-computer.

It's also useful in non-personnel areas for its lucid approach to data base construction and product evaluations.

Human Resource Information

\$24.95 from



Potentials Group, Inc.
20823 Stevens Creek Blvd.
Cupertino, CA 95014

California residents add 6½ per cent sales tax of \$1.62.

FIND OUT MORE FREE!

Apple Orchard
provides these
inquiry cards
to help you
get answers!

SEND IT IN ►

APPLE ORCHARD AUG. - SEPT. 1984 EXPIRES DEC. 1, 1984

Name _____ Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Please check one box in each category:

- This copy of Apple Orchard came to me through
 - ☐ User Group
 - ☐ Computer Store
 - ☐ News Stand
 - ☐ Borrowed
 - ☐ Subscription
 - ☐ Book Store
 - ☐ School
- I personally use most:
 - ☐ Apple II/II Plus
 - ☐ Apple ///
 - ☐ Apple Workalike
 - ☐ Apple //e
 - ☐ Lisa
 - ☐ IBM PC or workalike
 - ☐ Don't own yet
 - ☐ Other
- I have owned a microcomputer since
 - ☐ before 1977
 - ☐ 1978
 - ☐ 1980
 - ☐ 1982
 - ☐ not yet
 - ☐ 1979
 - ☐ 1981
 - ☐ 1983
- I use my computer primarily for
 - ☐ Home
 - ☐ My Business
 - ☐ Hobby
 - ☐ Education
 - ☐ Other
- I use my computer primarily with
 - ☐ Word Processor
 - ☐ Business Software
 - ☐ Modem
 - ☐ Graphics
 - ☐ Electronic Spreadsheet
 - ☐ Data Base
 - ☐ Games
 - ☐ Control of other Devices
- I spent on software in the past 12 months:
 - ☐ less than \$100
 - ☐ \$100 - \$300
 - ☐ \$300 - \$600
 - ☐ \$600 - \$1,000
 - ☐ More than \$1,000
- Regarding User Groups:
 - ☐ I belong to a local group
 - ☐ I'm active in a User Group
 - ☐ I have never belonged to a local group
 - ☐ I used to belong to a local group, but don't now
- My vote for the best article in this issue is _____
- My vote for the best ad in this issue is (Reader Service) number _____

Check each advertisement for corresponding number and circle below:

001	041	081	121	161	201	241
002	042	082	122	162	202	242
003	043	083	123	163	203	243
004	044	084	124	164	204	244
005	045	085	125	165	205	245
006	046	086	126	166	206	246
007	047	087	127	167	207	247
008	048	088	128	168	208	248
009	049	089	129	169	209	249
010	050	090	130	170	210	250
011	051	091	131	171	211	251
012	052	092	132	172	212	252
013	053	093	133	173	213	253
014	054	094	134	174	214	254
015	055	095	135	175	215	255
016	056	096	136	176	216	256
017	057	097	137	177	217	257
018	058	098	138	178	218	258
019	059	099	139	179	219	259
020	060	100	140	180	220	260
021	061	101	141	181	221	261
022	062	102	142	182	222	262
023	063	103	143	183	223	263
024	064	104	144	184	224	264
025	065	105	145	185	225	265
026	066	106	146	186	226	266
027	067	107	147	187	227	267
028	068	108	148	188	228	268
029	069	109	149	189	229	269
030	070	110	150	190	230	270
031	071	111	151	191	231	271
032	072	112	152	192	232	272
033	073	113	153	193	233	273
034	074	114	154	194	234	274
035	075	115	155	195	235	275
036	076	116	156	196	236	276
037	077	117	157	197	237	277
038	078	118	158	198	238	278
039	079	119	159	199	239	279
040	080	120	160	200	240	280

NOTE:

To speed the processing of your inquiry, please provide all of the information requested on the card. This will make it easier for the companies to follow up on your request as soon as possible.

PASS IT ON ►

Use these convenient inquiry cards to request free information about the products or services advertised in this issue of Apple Orchard.

For information about specific advertisers or products, circle the number on the card that matches the Help Number shown with the item, or in the Advertisers' Index.

Just drop one of the postage paid cards in the mail and your request will be immediately forwarded to the company or companies.

APPLE ORCHARD AUG.-SEPT. 1984 EXPIRES DEC. 1, 1984

Name _____ Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Please check one box in each category:

- This copy of Apple Orchard came to me through
 - ☐ User Group
 - ☐ Computer Store
 - ☐ News Stand
 - ☐ Borrowed
 - ☐ Subscription
 - ☐ Book Store
 - ☐ School
- I personally use most:
 - ☐ Apple II/II Plus
 - ☐ Apple ///
 - ☐ Apple Workalike
 - ☐ Apple //e
 - ☐ Lisa
 - ☐ IBM PC or workalike
 - ☐ Don't own yet
 - ☐ Other
- I have owned a microcomputer since
 - ☐ before 1977
 - ☐ 1978
 - ☐ 1980
 - ☐ 1982
 - ☐ not yet
 - ☐ 1979
 - ☐ 1981
 - ☐ 1983
- I use my computer primarily for
 - ☐ Home
 - ☐ My Business
 - ☐ Hobby
 - ☐ Education
 - ☐ Other
- I use my computer primarily with
 - ☐ Word Processor
 - ☐ Business Software
 - ☐ Modem
 - ☐ Graphics
 - ☐ Electronic Spreadsheet
 - ☐ Data Base
 - ☐ Games
 - ☐ Control of other Devices
- I spent on software in the past 12 months:
 - ☐ less than \$100
 - ☐ \$100 - \$300
 - ☐ \$300 - \$600
 - ☐ \$600 - \$1,000
 - ☐ More than \$1,000
- Regarding User Groups:
 - ☐ I belong to a local group
 - ☐ I'm active in a User Group
 - ☐ I have never belonged to a local group
 - ☐ I used to belong to a local group, but don't now
- My vote for the best article in this issue is _____
- My vote for the best ad in this issue is (Reader Service) number _____

Check each advertisement for corresponding number and circle below:

001	041	081	121	161	201	241
002	042	082	122	162	202	242
003	043	083	123	163	203	243
004	044	084	124	164	204	244
005	045	085	125	165	205	245
006	046	086	126	166	206	246
007	047	087	127	167	207	247
008	048	088	128	168	208	248
009	049	089	129	169	209	249
010	050	090	130	170	210	250
011	051	091	131	171	211	251
012	052	092	132	172	212	252
013	053	093	133	173	213	253
014	054	094	134	174	214	254
015	055	095	135	175	215	255
016	056	096	136	176	216	256
017	057	097	137	177	217	257
018	058	098	138	178	218	258
019	059	099	139	179	219	259
020	060	100	140	180	220	260
021	061	101	141	181	221	261
022	062	102	142	182	222	262
023	063	103	143	183	223	263
024	064	104	144	184	224	264
025	065	105	145	185	225	265
026	066	106	146	186	226	266
027	067	107	147	187	227	267
028	068	108	148	188	228	268
029	069	109	149	189	229	269
030	070	110	150	190	230	270
031	071	111	151	191	231	271
032	072	112	152	192	232	272
033	073	113	153	193	233	273
034	074	114	154	194	234	274
035	075	115	155	195	235	275
036	076	116	156	196	236	276
037	077	117	157	197	237	277
038	078	118	158	198	238	278
039	079	119	159	199	239	279
040	080	120	160	200	240	280



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 217 CLINTON, IOWA

POSTAGE WILL BE PAID BY ADDRESSEE

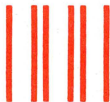


Apple Orchard

Direct Help Department

P.O. BOX 2520

CLINTON, IOWA 52735



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 217 CLINTON, IOWA

POSTAGE WILL BE PAID BY ADDRESSEE

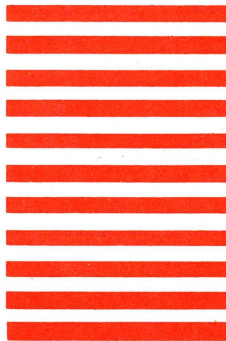


Apple Orchard

Direct Help Department

P.O. BOX 2520

CLINTON, IOWA 52735



Picture it!

Create motion
picture
shows.

TAKE 1

Stunning
Animation
that's fast, smooth, and
flicker free!

Write, produce, and
direct your own computer
movies. No programming
skills are needed to create
superb full-color ani-
mation. With easy to use
TAKE-1, you define anima-
tion shapes and move-
ments, "shoot" scenes
frame-by-frame, add text
at any time, and then
combine the scenes to
make a complete movie.
Perfect for presenta-
tions and demos.

Premiering:

- True sprite capability for multi-layered action without additional hardware.
- No size restriction on animated objects.
- Complete editing at all stages of production. Can use hi-res pictures, shapes, and fonts from PIXIT or other graphics utilities for background scenes and animation shapes.
- A convenient selection of animation libraries are available.
- Moving objects can have "windows" that allow background to show through.
- Optional programmer's "tool kit" lets you put the power of TAKE-1 animation in your own programs.

\$59.95 Requires 64K

Graphics processing that's easy, flexible and fun!

You don't have to be an artist or programmer, just select from Baudville's complete line of compatible graphics software. The possibilities are infinite.

Whether you've just started, or you're a seasoned hi-res hacker, you'll appreciate the unmatched power and simplicity of Baudville's graphics software.



Productive tools for home,
education, business, and the arts.

©Copyright 1984 Baudville

Available at your local software store or direct from **BAUDVILLE**.

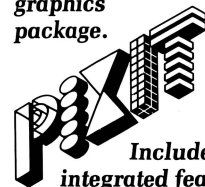
Visa and Master Charge accepted, Michigan residents add 4% sales tax.

BAUDVILLE, 1001 Medical Park Dr., S.E.

Grand Rapids, Michigan 49506 Phone (616) 957-3036

BAUDVILLE

The complete color
graphics
package.



Includes these
integrated features:

Create A Shape
using simple keystroke
commands.

Shape Table Editor
allows up to 128 shapes
placed anywhere in table.

Shape and Font Library
provides a convenient
selection of pre-drawn
shapes and text fonts.

Picture Editor
creates hi-res pictures
using mixed text and
graphics, circles, lines,
colorfill, and shape tables.

Slide Show
displays hi-res pictures
like a slide projector.

Printer Dump
Supports a wide
variety of dot matrix
printers and interface
cards. No additional soft-
ware required.

Uses standard hi-res
picture and Applesoft
shape table files
which are compatible
with other graphics
utilities.

Optional Shape Libraries
greatly reduce the time
required to generate
computer art. Each library
contains a wide variety
of artist drawn shapes for
specific areas of interest.

**\$49.95 Requires 48K
Optional Libraries
@\$20 each.**

For Apple II, Apple II+,
Apple IIe or compatible
computers.

Apple is a registered trademark
of Apple Computer, Inc.

Circle HelpCard No. 243
Chessel-Robocom Corporation
111 Pheasant Run
Newtown, PA 18940
(215) 968-4422

Languages (Programming)

An **Ada compiler** to support 68000-based computers, including the Apple Macintosh, will produce optimized object code.

Circle HelpCard No. 244

JRT Systems, Inc.
352 Miller Avenue
Mill Valley, CA 94941
(415) 388-0530

Volition Systems **Modula-2**, which includes extensive support material, has been reduced in price:

- Apple II \$295.00.
- Apple /// \$395.00.
- ASE, the Advanced System Editor, is now \$150.00.

Circle HelpCard No. 245

Volition Systems
P.O. Box 1236
Del Mar, CA 92014
(619) 481-2286

Languages (Languages)

Language Development Software runs on the Apple II and //e computers. All programs teach 1000 of the most common words in Spanish, French, German, Italian, Biblical Hebrew, Modern Hebrew or Arabic. In the near future, Latin, Russian, Polish, Swedish, and Classical Greek will also be available. A "Teach Yourself Book" is included for additional information in each package. \$56.95.

Circle HelpCard No. 246

Soflight Software
2223 Encinal Station
Sunnyvale, CA 94087
(408) 735-0871

DIWAN bilingual word processor or other bilingual software can now be printed with a bilingual ImageWriter printer. The package includes a utility disk with various Arabic fonts plus graphics which can be down-loaded to the ImageWriter. English and Arabic text can be freely mixed on a single printed page.

Circle HelpCard No. 247
Science and Information
Technology, Ltd.
London House
271 King Street
London W.6.
Phone: (01) 741 8011 (quote reference 2785)

Personal

The Oddsmaker, for the Apple II family and Apple /// computers (emulation mode), accepts wagers, calculates the odds, calculates pay-outs, totals the betting pool, allows the user to set the house cut, and even can print the tickets. \$44.95.

Circle HelpCard No. 248

CZ Software
358 Forest Road
South Yarmouth, MA 02664
(617) 771-4155

The Bartender's Guide & Host, for Apple II computers, is a guide to mixing up to 120 different drinks. Up to five different bar stocks can be tracked. It also estimates blood alcohol levels of "guests". \$29.95.

Circle HelpCard No. 249

After Six Software
P.O. Box 13015
Portland, OR 97213

Two programs from Andent, Inc.:

- **Fit and Trim**, for Apple II and //e computers (with 64K RAM, 1-2 disk drives, — printer optional), contains an educational and counseling units. Programs for weight, eating, and exercise reviews are included. \$39.00.

Circle HelpCard No. 250

- **The Stamp Collector**, for Apple II and //e computers, is a data base program for philatelists. Six programs include a Meeting List, Source List, Data Base and File Transfer. \$49.00.

Circle HelpCard No. 251

Andent, Inc.
1000 North Avenue
Waukegan, IL 60085
(312) 223-5077

Utilities

DeskTop Calendar, is a time management tool whose window graphics have been fully integrated into Lisa's Office System 3.0. Important notes, messages and appointments are only a mouse-click away. As important appointment times come up, the DeskTop Calendar will flash a message on the Lisa screen, even when other desktop tools are being

SAVE BIG ON COMPUTER PRODUCTS

MODEMS

HAYES

Smartmodem 300	200
Smartmodem 1200	489
Smartmodem 1200B	425
Micromodem II E	240
Smartcom II Software (for IBM PC)	90
Cables to Hayes Modems	CALL

NOVATION

SmartCat Plus (NEW)	CALL
J. Cat 300B direct	99
103 SmartCat 300B Smart	159
103/212 Smart 300 1200 B	379
AppleCat II 300 baud for Apple	200
212 AppleCat 300/1200B for Apple	390
Access 1-2-3 1200B for IBM	379

MONITORS

SUPER SPECIAL!!

COMREX

12" Green Hi. Res.	75
V300G 12" green	130
V300A 12" amber	145
V310A 12" amber (for IBM)	160
Color I + 13 composite	280
Color II + 13 RGB	425
Color IV 13 RGB analog	740

Monitor Cables

CB 5690 Apple II to Monitor	7
CB 5691 IBM to RGB	19
CB 5692 for TI-99/4A or Commodore	15

QUADRAM

MICROFAZER

QRMP-8 Par/Par	135
QRMP-8 Ser/Par	145
QRMMSS-8 Ser/Ser	145
QRMP-8 Par/Ser	145

QUADBOARD (for IBM PC)

QR5364 64K	270
QR4054 64K	270
QR B201 Quadcolor 1	200
QR B202 Quadcolor 2 (upgrade kit)	200

QUADLINK

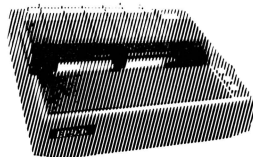
QR 3000 for IBM	475
QR 3010 for Compaq	475
QR 3020 for Columbia	475

AST

Six Pak Plus	270
Mega Plus II	270
1/0 Plus II	112

SAVE 31%-43%
OFF MFR. SUGG. RETAIL PRICES ON

PRINTERS
EPSON • OKIDATA • DIABLO
SCM • DELTA • GEMINI • TTX
RADIX • COMPUTE-MATE
MANNESMANN TALLY



CALL FOR PRICES

wabashi
maxell
Dysan

DISKETTES

10	5 1/4" Floppy Diskettes		
	SS / SD	SS / DD	DS / DD
Wabash	\$15 00	\$18 00	\$20 00
Maxell	NA	22 00	26 00
Dysan	NA	23 00	30 00

10 8" floppy diskettes

Dysan NA 32.00 37.00

CALL FOR QUANTITY PRICING ON

10 OR MORE BOXES OF DISKETTES

HUGE DISCOUNTS all

RIBBONS • DUST COVERS

PAPER • POST CARDS • LABELS

for almost every make and model

HEWLETT-PACKARD

CALCULATORS

HP10C	54	HP15C	90
HP11C	56	HP16C	90
HP12C	90		
HP 41C	145	HP 41CX	245
HP 41CV	168	HP 97	560

all software & accessories too

PORTABLE COMPUTERS

HP 71B	399	HP 750	799
--------	-----	--------	-----

series 70 software & peripherals discounted too



PERSONAL
COMPUTER
DEALER



SHARP

CALCULATORS

EL 5100	43
EL 5500 T	70
EL 512 T	28



SHARP

SHARP HAND HELD COMPUTERS

pc 1250A	80
pc 1260	CALL
pc 1261	CALL
pc 1500A	160

PRINTERS DISCOUNTED TOO

CABLES — INTERFACES

accessories for Computer Printers

GRAPPLER PLUS	105
16K BUFFERED GRAPPLER	165
Apple Dumping GX	65
Cardco G	65
CB5609 10 ft. Par Cable for IBM	25
CB5622 10 ft. 36x36 Parallel	25
CB5629 10 ft. 25x25 RS-232	25
CB5618 6 ft. TI-99/4A parallel cable	25
CB5620 6 ft. par. TRS80 mod. I-III-IV	22
ALL OTHER CABLES	CALL

CALL TOLL FREE 800-621-1269 EXCEPT Illinois, Alaska, Hawaii

Corp. Accts. Invited. Min. Ord. \$15.00. Mastercard or Visa by mail or phone. Mail Cashier's Check. Mon. Ord., Pers. Check (2 wks. to cln.) Add \$4.00 1st item (AK, HI, P.R., Canada add \$10.00 first item) \$1.00 ea. add'l shpg. & handl. Shipments to IL address add 7% tax. Prices subj. to change. WRITE for free catalog. RETURN POLICY: Defectives Only: Most products replaced within 30 days of purchase with identical merchandise only. Computer and large peripherals replaced only when defective on arrival (within 3 work days of delivery). Other problems covered by mfr. warranty. ALL ELEK-TEK MERCHANDISE IS BRAND NEW, FIRST QUALITY AND COMPLETE.

ELEK-TEK, inc.

6557 N. Lincoln Ave., Chicago, IL 60645
(312) 631-7800 (312) 677-7660

Circle HelpCard No.029

For Your **APPLE****

e-Z CARD

Uses Z80A CPU Needed for WORDSTAR**, dBASE II**, MULTIPLAN** and runs all 2.2 CPM** PROGRAMS. We use all "LS" devices to save power and the card will execute full Z80 and 8080 instruction sets, including Z80 interrupting. Software not provided. KIT: \$60⁰⁰ READY TO USE: \$90⁰⁰

128K CARD w/Built-in Disk

The ORBITAL 128K RAM CARD with a disk drive built-in, will expand the memory of your Apple*II, II+, IIe another 128K or can be used as a second disk drive. The ORBITAL 128K CARD emulates a disk drive but, not like the standard mechanical drives, the ORBITAL 128K CARD is ten times faster. It is faster because it fits inside the Apple* just like any other card and has no motor to turn on or off. KIT: \$209⁰⁰ READY TO USE: \$239⁰⁰

IIe** 64K 80 COL CARD

Expand your IIe** with 80 COLUMNS and 64K MEMORY including double high resolution graphics on "B" motherboard.

KIT: \$99⁰⁰ READY TO USE: \$129⁰⁰

COPYCARD

The COPYCARD is capable of making archive copies of your copy-protected software, a must for game players. The COPYCARD converts a copy protected program into a non-copy protected program in a standard COPY A format, giving you the opportunity to correct the software to use non-supported hardware. Typical hardware changes are for 80 column cards, printer interfaces, and other I/O devices. NOTE, SYSTEM REQUIREMENTS: Apple* II, II+ require 16K RAM card and one disk drive with 3.3 DOS. WILL NOT WORK at this time with Apple* IIe computer. COPYCARD comes with utility software. KIT: \$50⁰⁰ READY TO USE: \$80⁰⁰



Accepted. AZ residents add 6% sales tax. SHIPPING CHARGES: ADD \$1.59 per. UNIT

C.O.D. ORDERS: \$1.65 per ORDER

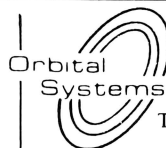
LIFETIME WARRANTY

ORBITAL SYSTEMS, INC. warrants their products to be free from defects in material and workmanship for the LIFETIME of the product. GUARANTEE: For kits only. IF YOU ARE UNABLE TO GET YOUR KIT TO WORK, for a fee of \$30.00 plus \$2.50 postage and handling, we will correct any errors in soldering and/or blown chips, and mail your card back ready to use. After six months, LIFETIME warranty in effect on kits.

Dealer Inquiries Invited

- **CPM trademark Digital Research
- **Multiplan trademark of Microsoft
- **D Base II trademark of Ashton Tate
- **Apple is the trademark of Apple Computer, Inc.
- **Wordstar is a trademark of Micro Pro, Inc.

Circle HelpCard No.032



ORBITAL SYSTEMS, INC.

5225 E HEARN RD.
SCOTTSDALE, AZ. 85254

CALL TO PLACE AN ORDER:

(602) 830-6457
(602) 996-5064

9 a.m. - 4 p.m., Mon.- Fri.

FOR APPLE II (ETC.) COMPATIBLES

HOT APPLE PI

\$39.95

This is a deluxe version of our Pi TO n PLACES program. It works the same, but is intended more for educational uses, as the history of Pi is presented, along with an explanation of how Pi is computed and how the program works. In addition, if the user has a Thunderclock, the process can be timed. Calculates Pi to any number of places you desire, with range determined by RAM size (48K limit approx. 7500). Fastest of its kind, even though in BASIC (so you can list and understand it).

STARSHIP MISSION SIMULATOR \$39.95

Floating Point version of the original "STAR TREK" game with nice new modifications. Simulates real time combat (if you don't react in time, the enemy does not wait for you before attacking again) and allows for faster data entry. More realistic scoring and rules. Hi-res introductory graphic provide "prized" images in a kinetic display. But the most important feature is the 30 odd page manual, fully illustrated and covering all known versions of the program. Its style is as entertaining as the script of a movie, and thousands have been sold to collectors who never even saw a computer! This is the only manual available for "TREK", and to our knowledge, no other source for the original TREKS exists.

IMAGE MANIPULATOR

\$39.95

This Apple II HI-RES Graphics utility makes it easy to marry images (double expose) or invert colors. The effects follow the memory map, and are interruptible so as to allow creation of venetian blind results. Storing, Loading, Viewing, and Manipulating images to/from page 1/2, and even toggling between page 1 and 2 rapidly for a neon sign effect, is all handled with single keystroke simplicity. FUN!

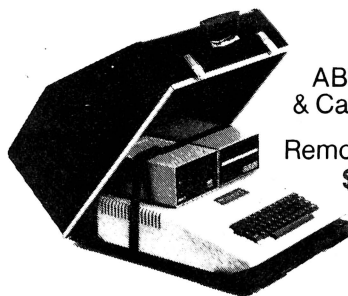
ORDER toll free (VISA and MasterCard only) 1-800-547-5006, or enclose check with order. Sorry no COD orders accepted. Please allow two to four weeks for delivery. Dealer and club pricing available on request. Add \$2.00 for shipping and handling.

EXPANDING SPACE SOFTWARE

4639 SE 34th, Portland, OR 97202

Circle HelpCard No.030

Travel With Your Apple... Call (800) 847-4176!



ABS Storage
& Carrying Case
with
Removable Cover
\$69.50*

*UPS Shipping Included.

Apple • IBM • Epson

Call for Complete Computer Case Catalog.
Credit Card Customers Call Toll Free

Fiberbilt

Ikelheimer-Ernst, Inc.
601 West 26th Street
New York, New York 10001-1199
(212) 675-5820 (N.Y.C. area)



Circle HelpCard No.031

independent variables in an experiment are exerting main and/or interactive effects on the dependent variable. \$50.00.

Circle HelpCard No. 225

- **Topics in Research Methods: Power;** uses simulated experiments to acquaint students with the concept of power. \$50.00.

Circle HelpCard No. 226

- **Topics in Research Methods: Survey Sampling;** introduces students to surveys and sampling procedures. \$50.00.

Circle HelpCard No. 227

CONDUIT

The University of Iowa
Oakdale Campus
Iowa City, IA 52242
(319) 353-5789

Financial

Your Personal Net Worth, for Apple II computers, is a financial management software program designed for home and family use. \$79.95.

Circle HelpCard No. 228

Scarborough Systems, Inc.
25 N. Broadway
Tarrytown, NY 10591
(914) 332-4545

Games/Simulations

Three new games have been released by **Strategic Simulations, Inc.:**

- **Objective Kursk** is a grand tactical simulation of the German attack against the southern flank of the Kursk salient. WWII. \$39.95.

Circle HelpCard No. 229

- **50 Mission Crush** is a WWII role-simulation; you must try to survive 50 missions (in a B-17 Flying Fortress) over France and Germany. \$39.95.

Circle HelpCard No. 230

- **War in Russia** is a division-level strategic game that covers 4 years of warfare. WWII. \$79.95.

Circle HelpCard No. 231

Strategic Simulations, Inc.
883 Stierlin Road
Bldg. A-200
Mountain View, CA 94043
Contact: Pamela Taylor, at
(415) 964-1353

HesWare has introduced a series of science simulation software for the Apple II family of computers:

- **Project: Space Station**, based on authentic NASA design plans, simulates the construction and operation of a space station.

Circle HelpCard No. 235

- **Ocean Quest** challenges players to search the world's oceans in a research submarine collecting data on marine life as well as searching for shipwrecks, sunken treasure and lost torpedoes.

Circle HelpCard No. 236

- **Cell Defense** pits users against a virus; spread of the virus can be checked with interferon, T-cells and antibodies.

Circle HelpCard No. 237

- **Life Force** teaches the basic cell processes by splitting DNA and producing complete, animated organisms.

Circle HelpCard No. 238

- **Reflections** teaches the physics of light reflection, refraction and absorption with mirrors and light beams.

Circle HelpCard No. 239

- **Calmpute**, a unique biofeedback software program, measures stress levels of users and suggests exercises to reduce tension.

Circle HelpCard No. 240

For further information, contact Dee MacLeod, at (415) 468-4111.

Human Engineered Software
Brisbane, CA

Graphics

Multigraph, for Apple II computers (with 64K RAM, two disk drives, and a printer), produces line, print and bar graphs from data entered manually or from a file. Line and print graphs can utilize up to six groups of data, bar graphs up to four. \$150.00. For further information, contact Judy Rosenbloom, at Janet Diederichs & Associates, Inc., Public Relations Consultants, at (312) 346-7886.

Circle HelpCard No. 241

MicroLab Computer Products

The **HGR6 Double-Res Graphics** package has been updated to run on an Apple //e with the Extended 80-column card. It is also ProDOS and DOS 3.3 compatible. \$49.95.

Circle HelpCard No. 242

ALF Products, Inc.
1315-F Nelson Street
Denver, CO 80215
(303) 234-0871

ROBO Systems CAD-1 computer aided drafting and design system announces a new library of pre-drawn symbols, components, and typefaces. Each library comes with a pictorial catalog of contents and, where necessary, instructions for use. Prices range from \$100.00 to \$250.00 per selection.

Know where your head is, at all times, with TRAK STAR constant digital readout



- **Saves copying time**
- **For nibble programs**

- + Works with nibble copy programs to display tracks and half-tracks that the program accesses.
- + Operates with any Apple®-compatible program.
- + Save time by copying only the tracks being used.
- + Displays up to 80 tracks and half-tracks; compatible with high density drives.
- + If copied program doesn't run, Trak Star displays track to be recopied.
- + Compact size permits placement on top of disk drive.
- + Does not use a slot in the Apple® computer.
- + For Apple® II, II+ and IIe

Apple is a registered trademark of Apple Computer Inc.

FREE INTRODUCTORY BONUS

with purchase of Trak Star

- **Trak Star disk contains patching software.**
- **Simple-to-operate, menu-driven Trak Star software automatically repairs a bad track without requiring technical expertise.**

99⁹⁵

Plus \$3 shipping and handling charge

Adapter required for 2-drive systems: \$12
Documentation only: \$3
Refundable with purchase of Trak Star
(foreign orders add \$8 for freight and handling)
Personal checks, M.O.,
Visa and Mastercard

Midwest

Phone 913 676-7242



Circle HelpCard No.024

Microsystems

9071 Metcalf / Suite 124
Overland Park, KS 66212

3Pak™

S E R I E S

The International Apple Core™ presents its ongoing series of theme packaged programs. Each 3Pak™ contains three disks of public domain software. All of the programs are written for Apple II computers in DOS 3.3 and are ready to run—just boot.

Educational 3Pak offers you an Applesoft Tutorial disk, a Machine Language Tutorial disk with utilities, and a disk of 30 Mathematical Tools. The tutorial disks help you learn while doing. A very practical helper.

Logo 3Pak presents you with the Logo Tool Kit disk, a sample programs disk, and a disk with the Logo Language documentation. The Tool Kit disk has significant enhancements for Apple Logo. The sample programs disk has turtle graphics, animation, geometry, games and simulations. You and your children will be able to perform simple projects with just the first session.

Financial 3Pak contains over 100 programs on three disks covering items from Annuity Calculations to VisiCalc formulas. With this package you will be able to calculate mortgages or track stock trends. This 3Pak may very well pay for itself by virtue of its many financial programs.

Games 3Pak is the lighter side of our series. You will be able to play pinball with the Pinball Games disk or shot aliens, land on the Moon or kill flies with the Hi-Res Games disk. The Arcade Games disk lets you enjoy arcade action right at the console of your Apple.

Each 3Pak is priced at only \$24.95. One program disk alone could cost you more. And if you are an IAC member you can save \$5.00 on all 3Paks. So look for our membership ad to apply. It's worth it.

To order by mail send check or money order written to International Apple Core, payable in U.S. funds and drawn on U.S. bank. Add \$1.50 shipping and handling, and 6.5% Sale Tax if you live in California. Then mail to International Apple Core, 908 George Street, Santa Clara, CA 95050 USA.

To order by phone call: (408) 727-7652. VISA or Mastercard accepted. Please have your card number ready.

Dealer inquiries are welcome.

3Pak is a trademark of International Apple Core.

Apple and Apple II are registered trademarks of Apple Computer, Inc.



© 1984 International Apple Core

Apple Orchard Back Issues

Every magazine is new until you've read it!

In the United States:

\$4.50 each. \$4.00 each in quantities of five or more.
(May be different issues.)
Price includes shipping and handling costs.

In Canada:

\$5.00 (US) each. \$4.50 (US) each in quantities
of five or more.
(May be different issues.)
Air Mail add \$1.50 (US) per issue!

Elsewhere in the World:

\$5.50 (US) each. \$5.00 (US) each in quantities
of five or more.
(May be different issues.)
Air Mail add \$2.00 (US) per issue!

Payment must accompany order, must be in US funds,
and must be drawn on a US bank.

Apple Orchard
P O Box 6502
Cupertino, CA 95015

What's the difference between an —INCH— and a **MacInch**

Only about 1/16th of an inch. But a 6 inch horizontal line on the MacPaint™ screen will print 3/8th's of an inch longer than you expect. If your scale is 1"=100' your drawing is off 37.5 feet.

The **MacInch™**, 2 dimensional rulers adjust for the horizontal distortion between the MacPaint™ screen and the Imagewriter™ print-out so that the "MacInch" you see on the screen will be a "real" inch on your Imagewriter™ print-out.

Useful in adding additional detail to your MacPaint™ drawing or reading distances with your "real" ruler. And, when you type "1 in.=100 ft" on your MacPaint™ screen, it will be "1 in.=100 ft" on your Imagewriter™ print-out.

Order now and receive free the "Quick Rule" **MacInch™** ruler with your order. Measures normal and Fat Bit Screens.

For prompt delivery of your normal screen and Fat Bit screen, two dimensional rulers and your **FREE** "Quick Rule" **MacInch™** ruler, mail \$9.95 check or money order to:

DLS Data Systems
8603 Crownhill, Suite 23
San Antonio, Texas 78209
(512) 828-4867

ProFILER Data Base Manager

Featuring ProDOS*
APPLE'S NEW DISK
OPERATING SYSTEM
(Included at no additional cost.)

Recipe File
TICKLER File

The first truly EASY Data Base Manager...

- Design any form to fit YOUR needs
- Create your first form in under 15 minutes!
- Full screen editing of forms and data
- Store up to 1500 records per disk
- Compatible with the Apple ProFILE Hard Disk (up to 65,000 records per file on Hard Disk)
- Indexed files for instant record access
- Instantly retrieves any selected form
- Includes EASY to use Report Generator — FREE!
- Generate columnar and free form reports
- Totals, subtotals, averages, derived columns, etc.
- Easier to use than dBASE II* and faster than PFS*

Patent Recall
Inventory Control
Sales Analysis

Employee Records
Mailing Labels

WHY PAY DOUBLE FOR
HALF THE PERFORMANCE...

Available NOW...Only \$69.95

ProFILER available from selected dealers and direct from

CUSTOM COMPUTER PRODUCTS

355 COSTA MESA ST. • COSTA MESA, CA 92627
CALL (714) 548-5429



Programmers: The sellout
Super Applesoft Line
Editor is still available
from Custom Computer
Products for only \$24.95

TERMS:
MASTERCARD
VISA
Check or Money Order.
Add \$3.00 for Shipping.
Calif. Cust. add 6%

* Apple, Applesoft and ProFILE are registered trademarks of Apple Computer, Inc.
dBASE II is a registered trademark of Ashton Tate, Inc.
PFS is a registered trademark of Software Publishing Corp.

Circle HelpCard No.037

APPLE® SERIAL LET YOUR APPLE TALK TO THE WORLD

The BD][+ serial interface is an Apple® compatible plug-in that is ideal for use with LETTER QUALITY PRINTERS, Modems, Teletypes (Current Loop supported) and more. It supports ETX-ACK or 'ready-line' handshakes. Included is a comprehensive users manual and a 180 day warranty. BEST of all, only \$39.95/KIT, \$59.95/ASSM. (Add \$2.00 S&H).

For MODEM users we offer a FULL DUPLEX terminal routine that has DATA CAPTURE, on-line printing, file UPLOADING, and //e 80 column operation. These features and more supplied on unprotected disk at the unheard of price of \$25.00.

SATISFACTION GUARANTEED. If not completely satisfied, return the interface in 15 days for a full refund.

B & D Electronics:

Keeping the cost of your
Apple® Byte size.

SEND check, money order or
COD to:

B & D ELECTRONICS

P.O. Box 3651

Lawrence, Ks. 66044

(913) 841-4182

Circle HelpCard No.036

Most orders shipped in 24 hours.

DEALERS INVITED

used. Text can be transferred to and from LisaWrite. Everyone in the office can have their own personal calendar. \$295.00.

Circle HelpCard No. 252

Videx, Inc.

Corvallis, OR 97330

(503) 758-0521

Mouseprint allows Apple's Mouse-Paint program to print directly on printers other than Apple's Dot Matrix or ImageWriter. Versions are available for most popular printer/interface combinations. \$22.95.

Circle HelpCard No. 253

Ahware

805 Luz Court

Danville, CA 94526

Two programs, for the Apple II (with DOS 3.3 or ProDOS), are available from Third Wave Technology:

- **Print-Quick**, menu driven, features joystick or keyboard selection of options; set-ups can be saved as EXEC files. \$39.95.

Circle HelpCard No. 254

- **Pic-Quick**, a Hi-Res manager, gives "cut and paste" capability; allows magnification of portions of the screen. \$39.95.

Circle HelpCard No. 255

Third Wave Technology, Inc.

16309 Elsienna Avenue

Cleveland, OH 44135

(216) 671-8991

The C.I.A. (Confidential Information Advisors) enables users to carry out sophisticated disk espionage with five utilities. These utilities include a disk editor that can be used on normal and most copy protected diskettes, a linguist that dumps tracks of raw nibbles (it translates normal, corrupted or locked programs and textfile), a tracer that can sniff out VTOC, catalog sectors (it also scans an entire disk for 1 to 6 search strings in 19 to 135 seconds), a code breaker that uses special tables in DOS 3.3 and 3.2 to decrypt commercial programs, and the tracker which shadows the disk arm as DOS loads, saves, renames, or does anything else to a disk. (The accompanying manual, The CIA Files, is fascinating reading. Ed.) \$65.00.

Circle HelpCard No. 256

Golden Delicious Software

7 Sloan Avenue

London SWS 3JD, England

Visicalc Formatting Aids ///, for the Apple /// computer, is a package of integrated utilities including the following programs:

- Print File Reader;
- Formula Reader;
- Label Splitter;
- Label Merger;
- Print File Arranger;
- Advanced Version Down Loader;

- Variable Width Reader/Adjuster. These programs are menu driven, error trapped, and screen formatted. \$69.95.

Circle HelpCard No. 257

Blytheco

Visicalc Formatting Aids

22501 Eloise Drive

El Toro, CA 92630

(714) 951-1231

Copy ///, for the Apple ///, reads an entire disk into memory and then formats, writes and verifies all data to blank disks using up to 4 drives at once. Can be used on a single drive system. \$49.95.

Circle HelpCard No. 258

Digital Microwave

P.O. Box 2508

Seal Beach, CA 90740

(714) 855-0555

Competition Karate, for Apple II Plus and //e computers, is a role-playing strategy/action game where players create teams of progressing individual fighters. Requires paddles. \$34.95.

Circle HelpCard No. 259

Motivated Software, Inc.

80 Rancho Drive

Mill Valley, CA 94941

(415) 383-6959

The **Barkovitch I/O Tracer**, for use on Apple II Plus and //e computers, is a hardware card (that fits into any slot), and a machine language program supplied on diskette. The program provides track/sector editing; a dual cursor shows Hex and Ascii simultaneously. \$25.00.

Circle HelpCard No. 260

Dave Barkovitch Associates

2400 Whittier Street

Rahway, NJ 07065

(201) 499-0636

Word Processing

New products from **Haba Systems**:

- **HabaMerge**, for AppleWorks or /// E-Z Pieces, allows the merging of database and word processing to create custom form letters and mailing labels. \$69.95.

Circle HelpCard No. 261

- **HabaTemplates**, for AppleWorks or /// E-Z Pieces, provides 54 ready-to-use database and spreadsheet applications. \$29.95.

Circle HelpCard No. 262

Haba Systems

15154 Stagg Street

Van Nuys, CA 91405

(818) 901-8828

Touchtype was written by a teacher out of frustration with the lack of teacher features on business oriented programs. Two editors allow working on

two files at the same time. Screen format shows how printed page will look. DOS is three times faster than DOS 3.3; a pseudodisk is built in. An eighty-column wide catalog remains in memory for instant access. The program requires an Apple (or clone) with 80 column card (/e, Videx or clone), a good monochrome monitor and one disk drive. It uses 48k to 256k on any combination of RAM cards (except /e 128k card). Price is \$100.00, which includes a thirty page manual and two program copies. (Also available with an eighty-column card for \$169.00.) No credit card orders. For further information, contact Harvey R. Brown, at (403) 864-3608.

Circle HelpCard No. 263
Software Spirit
P.O. Box 825
Spirit River
Alberta, Canada TOH 3G0

The **KoalaPad Editor** for ScreenWriter (Version 2.0 and 2.2) allows single touch editing from the INSERT or CHANGE modes of ScreenWriter. Installation is only required once. Package includes the ScreenWriter KoalaPad Editor Loader Disk, full instructions, and a laminated overlay for the KoalaPad. \$25.00.

Circle HelpCard No. 264
Hardsoft Products
P.O. Box 90012
Honolulu, HI 96835

The **Business Letter Library**, for Apple II and /e computers, is a collection of hundreds of model business letters on disks, ready for use with a computer and almost any word processing program that uses ASCII text files. The program is menu driven, and includes a LetterSearch feature that allows letters to be quickly located and viewed.

Circle HelpCard No. 265
Delta Point Corporation
711 West 17th Street, B-10
Costa Mesa, CA 92627
(714) 642-1827

Databases

Keystroke Data Base is now available on the Apple Lisa 2. Features include computed fields, field formatting, default responses, cross reference/look-up to data in a second file, flexible report formatting, and full integration with Lisa's mouse. Maximum number of records in a single file is over two billion (Ed.—That's not a typo! It would take a very large disk; Apple will soon release an 86 megabyte hard disk). The program needs an Apple Lisa 2, with one megabyte RAM memory, hard disk drive, and the Lisa Office System or

Workshop. A Macintosh release is due soon. For further information, contact Bob Boyle, at (815) 459-4210.

Circle HelpCard No. 266
Brock Software Products, Inc.
P.O. Box 799
Crystal Lake, IL 60014

Books

- *The Apple //c Book*, by Bill O'Brien (ISBN 0-554-34149-9) \$12.95, 256 pp, by Bantam Computer Books.
- *Going Places With The New Apple //c—All You'll Need To Know To Get There*, by Danny Goodman (ISBN 0-671-53188-3) \$3.95, 256 pp, by Simon and Schuster.
- *Computer Language Reference Guide*, 2nd Edition, by Harry L. Helms, Jr. (ISBN 0-672-21823-2) by Howard W. Sams & Co., Inc.

KeyFax are two sided templates, with reference information, from Howard W. Sams & Co., Inc. Templates are \$12.95 each. Subjects include:

- **Applesoft BASIC** (both sides);
- **AppleWriter //e/DOS 3.3**;
- **Multipan/DOS 3.3**;
- **ProDOS (both sides)**;
- **Visicalc/DOS 3.3**.

The following "Quick and Easy" series of paperback books has been released by Arrays, Inc./The Book Division:

- *The Quick and Easy Guide to Word Processing on the Apple*, by Steve Adams (ISBN 0-912003-29-4) \$4.95.
- *The Quick and Easy Guide to Spreadsheets on the Apple*, by Tom Simondi (ISBN 0-912003-28-6) \$4.95.
- *The Quick and Easy Guide to Database Management on the Apple*, by Michael Mellin, Ph.D. (ISBN 0-912003-26-X) \$4.95.
- *The Quick and Easy Guide to Educational Software on the Apple*, by Robert P. Wells, Ph.D. (ISBN 0-912003-27-8) \$4.95.

Arrays, Inc./The Book Division
11223 South Hindry Avenue
Los Angeles, CA 90045
(213) 410-9466

- *How to Get FREE Software*, by

Alfred Glossbrenner \$14.95, by St. Martin's Press.

- *Turtlsteps: An Introduction to Apple Logo and Terrapin Logo*, by Pamela Sharp (ISBN 0-89303-906-3) \$13.95, 208 pp, by Brady Communications Co., Inc., A Prentice-Hall Publishing Company.

New titles from Harper & Row:

- *Microcomputing Programming in BASIC*, by George Tsu-Der Chou \$13.95.
- *Simplified BASIC programming for Microcomputers*, by Gerald A. Silver and Myrna Silver \$15.95.
- *LISP: A Gentle Introduction to Symbolic Computation*, by David S. Touretzky \$18.95.
- *Understanding ADA*, by Ken Shumate \$18.95.
- *Creating Courseware*, by Ruth K. Landa \$20.95.
- *Beginning Micro-PROLOG*, by Richard Ennals (ISBN 0-06-669000-5) \$15.95, 196 pp.
- *The Epson Connection: Apple*, by W.H. Darnall and D.B. Corner \$16.95, by Reston Publishing Co., Inc.
- *The Power of AppleWorks*, by Robert E. Williams (ISBN 0-13-688045-2) \$19.95, 232 pp., A Spectrum Book, distributed by Prentice-Hall, Inc.

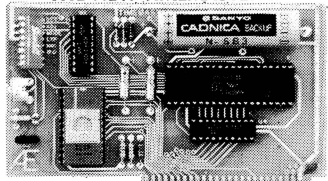
New titles from Osborne/McGraw-Hill:

- *MacTelecommunications*, by Jonathan Erickson & Robert J. Sayre (ISBN 0-88134-155-X) \$16.95, 180 pp.
- *Using MacWrite & MacPaint*, by Tim Field (ISBN 0-88134-137-1) \$11.95, 160 pp.
- *Microsoft Word Made Easy*, by Paul Hoffman (ISBN 0-88134-144-4) \$14.95, 250 pp.
- *Microsoft Word Made Easy: Macintosh Edition*, by Paul Hoffman (ISBN 0-88134-152-5) \$14.95, 200 pp.
- *Multipan Made Easy: Macintosh Edition*, by Walter A. Ettlin (ISBN 0-88134-153-3) \$14.95, 200 pp.
- *The TK! Solver Book: A Guide to Problem-Solving in Science, Engineering, Business, and Education*, by Milos Konopassek and Sundaresan Jayaraman (ISBN 0-88134-115-0) \$19.95, 360 pp.

Apple Peripherals Are All We Make

That's Why We're So Good At It!

THE NEW TIMEMASTER II



Automatically date stamps files with PRO-DOS

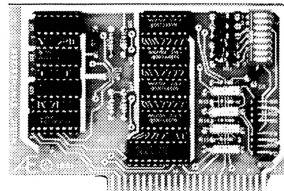
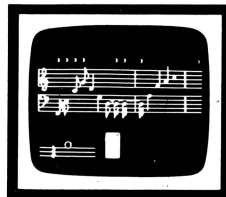
NEW 1984 DESIGN
An official PRO-DOS Clock

- Just plug it in and your programs can read the year, month, date, day, and time to 1 millisecond! The only clock with both year and ms.
- NiCad battery keeps the TIMEMASTER II running for over ten years.
- Full emulation of ALL other clocks. Yes, we emulate Brand A, Brand T, Brand P, Brand C, Brand S and Brand M too. It's easy for the TIMEMASTER to emulate other clocks, we just drop off features. That's why we can emulate others, but others CAN'T emulate us.
- The TIMEMASTER II will automatically emulate the correct clock card for the software you're using. You can also give the TIMEMASTER II a simple command to tell it which clock to emulate (but you'll like the Timemaster mode better). This is great for writing programs for those poor unfortunates that bought some other clock card.
- Basic, Machine Code, CP/M and Pascal software on 2 disks!
- Eight software controlled interrupts so you can execute two programs at the same time (many examples are included).
- On-board timer lets you time any interval up to 48 days long down to the nearest millisecond.

The TIMEMASTER II includes 2 disks with some really fantastic time oriented programs (over 40) including appointment book so you'll never forget to do anything again. Enter your appointments up to a year in advance then forget them. Plus DOS dates so it will automatically add the date when disk files are created or modified. The disk is over a \$200.00 value alone—we give the software others sell. All software packages for business, data base management and communications are made to read the TIMEMASTER II. If you want the most powerful and the easiest to use clock for your Apple, you want a TIMEMASTER II.

PRICE \$129.00

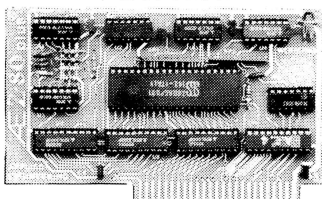
Super Music Synthesizer Improved Hardware and Software



- Complete 16 voice music synthesizer on one card. Just plug it into your Apple, connect the audio cable (supplied) to your stereo, boot the disk supplied and you are ready to input and play songs.
- It's easy to program music with our compose software. You will start right away at inputting your favorite songs. The Hi-Res screen shows what you have entered in standard sheet music format.
- Now with new improved software for the easiest and the fastest music input system available anywhere.
- We give you lots of software. In addition to Compose and Play programs, 2 disks are filled with over 30 songs ready to play.
- Easy to program in Basic, to generate complex sound effects. Now your games can have explosions, phaser zaps, train whistles, death cries. You name it, this card can do it.
- Four white noise generators which are great for sound effects.
- Plays music in true stereo as well as true discrete quadraphonic.
- Full control of attack, volume, decay, sustain and release.
- Will play songs written for ALF synthesizer (ALF software will not take advantage of all our card's features. Their software sounds the same in our synthesizer.)
- Our card will play notes from 30HZ to beyond human hearing.
- Automatic shutoff on power-up or if reset is pushed.
- Many many more features.

PRICE \$159.00

Z-80 PLUS!



- TOTALLY compatible with ALL CP/M software.
- The only Z-80 card with a special 2K "CP/M detector" chip.
- Fully compatible with microsoft disks (no pre-boot required).
- Specifically designed for high speed operation in the Apple IIe (runs just as fast in the II+ and Franklin).
- Runs WORD STAR, dBASE II, COBOL-80, FORTRAN-80, PEACHTREE and ALL other CP/M software with no pre-boot.
- A semi-custom I.C. and a low parts count allows the Z-80 Plus to fly thru CP/M programs at a very low power level. (We use the Z-80A at fast 4MHZ.)
- Does EVERYTHING the other Z-80 boards do, plus Z-80 interrupts.

Don't confuse the Z-80 Plus with crude copies of the microsoft card. The Z-80 Plus employs a much more sophisticated and reliable design. With the Z-80 Plus you can access the largest body of software in existence. Two computers in one and the advantages of both, all at an unbelievably low price.

PRICE \$139.00

Viewmaster 80

There used to be about a dozen 80 column cards for the Apple, now there's only ONE.

- TOTALLY Videx Compatible.
- 80 characters by 24 lines, with a sharp 7x9 dot matrix.
- On-board 40/80 soft video switch with manual 40 column override
- Fully compatible with ALL Apple languages and software—there are NO exceptions.
- Low power consumption through the use of CMOS devices.
- All connections are made with standard video connectors.
- Both upper and lower case characters are standard.
- All new design (using a new Microprocessor based C.R.T. controller) for a beautiful razor sharp display.
- The VIEWMASTER incorporates all the features of all other 80 column cards, plus many new improvements.

	PRICE	BUILT IN SOFTWARE	SHIFT KEY SUPPORT	LOW POWER DESIGN	80 COLUMN HOME	7x9 DOT MATRIX	LIGHT PEN INPUTS	40 COLUMN OVERRIDE	INVERSE CHARACTERS
VIEWMASTER	179	YES	YES	YES	YES	YES	YES	YES	YES
SUPRTERM	MORE	NO	YES	NO	NO	NO	NO	YES	YES
WIZARD80	MORE	NO	NO	NO	NO	YES	NO	YES	YES
VISION80	MORE	YES	YES	NO	NO	YES	NO	NO	NO
OMNIVISION	MORE	NO	YES	NO	NO	NO	NO	YES	YES
VIEWMAX80	MORE	YES	YES	NO	NO	YES	NO	NO	YES
SMARTERM	MORE	YES	YES	NO	NO	NO	YES	YES	NO
VIDEOTERM	MORE	NO	NO	YES	NO	YES	YES	NO	YES

The VIEWMASTER 80 works with all 80 column applications including CP/M, Pascal, WordStar, Format II, Easywriter, Apple Writer II, VisiCalc, and all others. The VIEWMASTER 80 is THE MOST compatible 80 column card you can buy at ANY price!

PRICE \$179.00

- Expands your Apple IIe to 192K memory.
- Provides an 80 column text display.
- Compatible with all Apple IIe 80 column and extended 80 column card software (same physical size as Apple's 64K card).
- Can be used as a solid state disk drive to make your programs run up to 20 times FASTER (the 64K configuration will act as half a drive).
- Permits your IIe to use the new double high resolution graphics.
- Automatically expands Visicalc to 95 K storage in 80 columns! The 64K config. is all that's needed, 128K can take you even higher.
- PRO-DOS will use the MemoryMaster IIe as a high speed disk drive.

MemoryMaster IIe 128K RAM Card

- Precision software disk emulation for Basic, Pascal and CP/M is available at a very low cost. NOT copy protected.
- Documentation included, we show you how to use all 192K.

If you already have Apple's 64K card, just order the MEMORYMASTER IIe with 64K and use the 64K from your old board to give you a full 128K. (The board is fully socketed so you simply plug in more chips.)

MemoryMaster IIe with 128K	\$249
Upgradeable MemoryMaster IIe with 64K	\$169
Non-Upgradeable MemoryMaster IIe with 64K	\$149

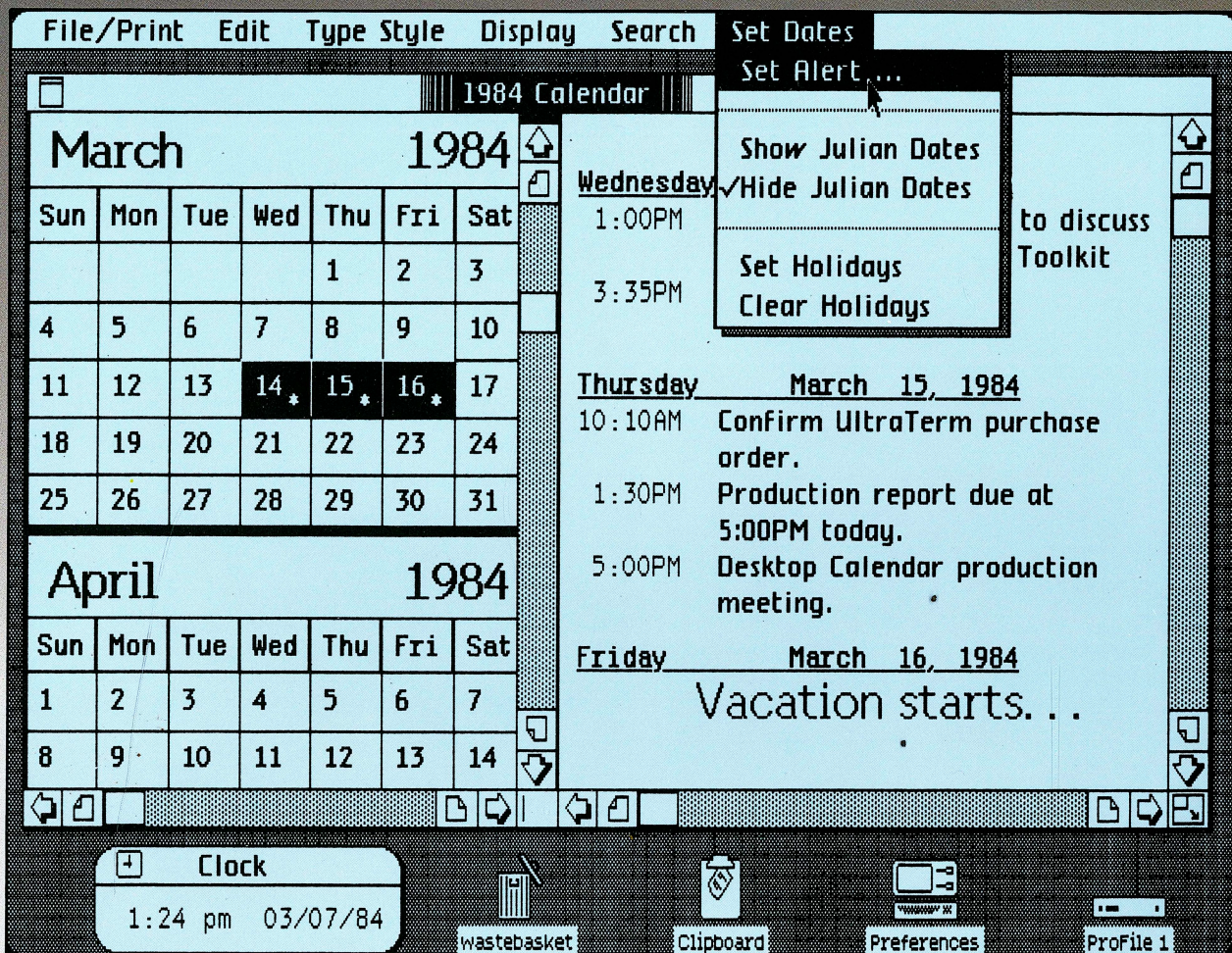
Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec. components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products work in the APPLE IIe, II, II+ and Franklin. The MemoryMaster IIe is IIe only. Applied Engineering also manufactures a full line of data acquisition and control products for the Apple; A/D converters and digital I/O cards, etc. Please call for more information. All our products are fully tested with complete documentation and available for immediate delivery. All products are guaranteed with a no hassle **THREE YEAR WARRANTY**.

Texas Residents Add 5% Sales Tax
Add \$10.00 If Outside U.S.A.
Dealer Inquiries Welcome

Send Check or Money Order to:
APPLIED ENGINEERING
P.O. Box 798
Carrollton, TX 75006

Call (214) 492-2027
8 a.m. to 11 p.m. 7 days a week
MasterCard, Visa & C.O.D. Welcome
No extra charge for credit cards

INTRODUCING



Desktop Calendar for your Lisa 2

Desktop Calendar, a new tool for the Lisa 2, will improve the way you work because it helps you manage your time.

You're an important person. Working hard to get the job done. But what happens if you get so involved in your work that you lose track of time? Missing an important appointment or meeting can mean disaster.

If you put the times and dates of all your important appointments and meetings into Desktop Calendar, it will automatically remind you of them in time for you to meet your commitments. Once you place Desktop Calendar on your electronic desktop, you can use your computer to write a letter, recalculate a schedule, prepare a financial statement, or use any of the Lisa Office System Tools. At the proper time Desktop Calendar will interrupt, reminding you of your appointment.

Talking on the phone to an important client? Want to know all the dealings you've had with them for the last three months? Desktop Calendar will search through its electronic notebook and tell you. Want to know the address of an important business contact named 'JONES'? Desktop Calendar will tell you that too.

Desktop Calendar is more than just a calendar for your computer. It will also keep track of appointments, hold addresses for easy reference and remind you of important events, even when you are busy working with another tool in the Lisa Office System.

Desktop Calendar will be available third quarter 1984 from Videx.

Videx Inc.

1105 N.E. Circle Blvd. • Corvallis • OR 97330
503 758-0521

Apple's® new ProDOS™ is pro Thunderclock™

When Apple designed their new ProDOS operating system for the Apple II family, they included an important new function—the ability to automatically read a clock/calendar card. Nice touch.

It means that every time you create a new file or modify an existing one, the time and date are automatically recorded and stored in the CATALOG.

Now you can instantly know the exact time your files were last updated.

Apple could have chosen any clock for ProDOS to recognize, but they chose only one.

Thunderclock.

It's the only clock mentioned in the ProDOS manuals.

That's a nice stroke for us, but it's even better for you.

Because, in addition to organizing your disk files, Thunderclock will add a new dimension to all the new ProDOS-based software. For instance, with business or communications

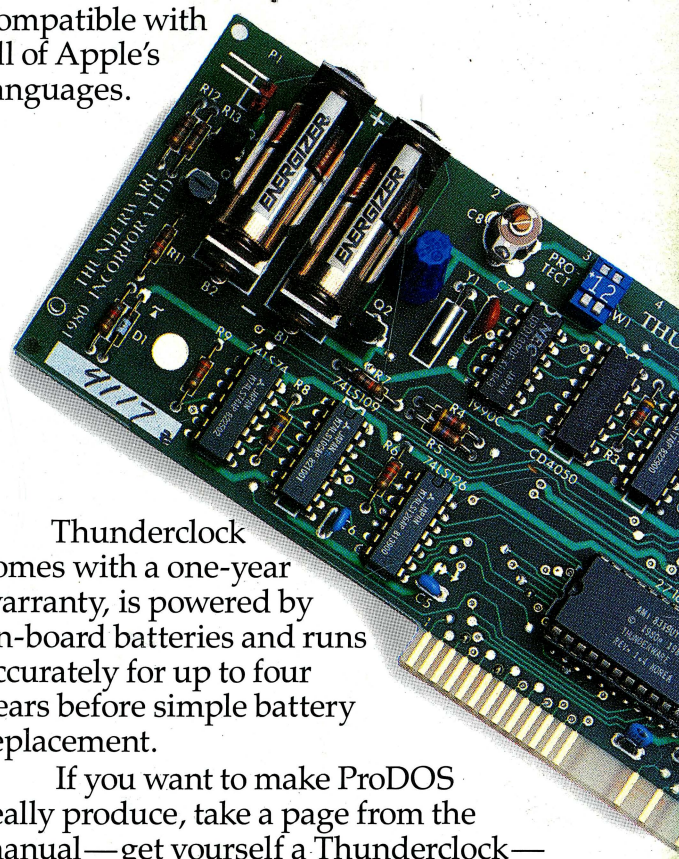
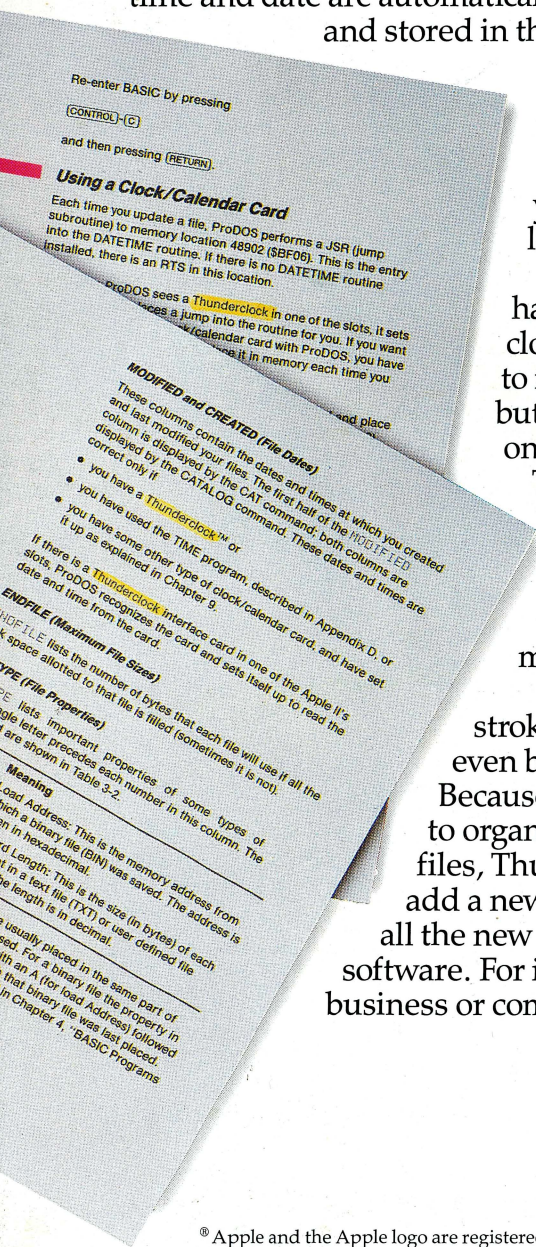
software you can access a data base or send electronic mail automatically, when the rates are lowest. Even when you're not around. And that's just a start. The better you can use your Apple, the better you can use a Thunderclock.

Thunderclock gives you access to the year, month, date, day-of-week, hour, minute and second. It lets you time intervals down to milliseconds and is compatible with all of Apple's languages.

Thunderclock comes with a one-year warranty, is powered by on-board batteries and runs accurately for up to four years before simple battery replacement.

If you want to make ProDOS really produce, take a page from the manual—get yourself a Thunderclock—the official ProDOS clock.

See your dealer or contact us.



® Apple and the Apple logo are registered trademarks of Apple Computer, Inc.

™ ProDOS is a trademark of Apple Computer, Inc.

 **THUNDERWARE, INC.**
44 Hermosa Avenue, Oakland, CA 94618
(415) 652-1737